

SerialComm ETH-SER-EE9 Serial Device Server / Ethernet to Serial Converter User Manual



CHANGE HISTORY

Version	Date	Description of Changes
1.0	February 16, 2015	Initial Publication of Document
1.1	April 9, 2015	Re-edited the document
1.2	April 22, 2015	Replaced two images that were outdated

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1 ETH-SER-EE9 GENERAL DETAILS

1.1 SCOPE

This manual describes the SerialComm's ETH-SER-EE9 Serial Device Server (Ethernet to Serial Converter) hardware and browser-based configuration user interface. Although not required, the VSP Management Software and built-in online configuration tool should be used to configure the hardware. The VSP Management Software is a Microsoft Windows-based device management software for the SerialComm ETH-SER-EE9. The online ETH-SER-EE9 configuration tool is browser-based and also used for configuration purposes. The ETH-SER-EE9 can optionally be configured using a serial AT command set.

- This document describes the latest version of the ETH-SER-EE9 hardware and associated browser configuration tool.
- The VSP Management Software is covered in detail in the SerialComm VSP Management Software V1.2.7 User Manual.
- The AT Command Set is covered in detail in the SerialComm ETH-SER-EE9 AT Command Configuration Guide.

The examples used in this document will be presented using the Microsoft Windows 7 Operating System.

1.2 OVERVIEW

The SerialComm ETH-SER-EE9 is a rugged industrial-grade power efficient (less than 1.4 Watts) serial device server which will convert from RS-232, RS-485 or RS-422 serial to Ethernet or vice versa. The ETH-SER-EE9 serial device server will also make serial devices internet-ready supporting TCP, UDP, ARP, ICMP, DHCP and Windows Native COM, LMF protocols. The ETH-SER-EE9 provides one serial port (RS-232: DB9, RS-485/RS-422: 5 position terminal block) and one 10/100M Ethernet port in order to convert from serial devices to IP-based Ethernet and vice versa.

The ETH-SER-EE9 can be configured with a VSP Management Software and an online browser-based configuration tool or through AT commands. The software user interface is robust in functionality, enabling the experienced Engineer to do complex configuration tasks while simple enough for a novice to use. All configurations can be performed by the Ethernet network (supporting communication across gateways and routers) or by the serial port, making the ETH-SER-EE9 convenient and user-friendly.

The ETH-SER-EE9 is designed with ESD protection as well as voltage surge protection and is specifically designed to function reliably in hazardous environments. It can be used as a stand-alone unit; wall or panel mounted or DIN rail mounted with optional DIN rail mounts.

1.3 FEATURES

- High Performance 32 Bit ARM Processor
- Supports 3-in-1 RS-232/RS-485/RS-422 serial interface

- Supports 10/100M Ethernet data transmission speeds
- Supports 300bps to 115.2Kbps serial data transmission speeds
- Supports TCP, UDP, ARP, ICMP, HTTP and DHCP protocols
- Supports IP-based direct Ethernet or indirect Ethernet across gateways and routers
- Supports standard TCP/IP SOCKET
- Supports static IPs as well as dynamic IPs
- Supports Windows serial interface driver mode
- Supports virtual serial driver access and auto connect if the Ethernet network should disconnect
- Supports network and serial interface configuration mode with supplied configuration software or AT command set
- Low consumption design: less than 1.4 Watts
- Supports standalone, wall or panel mounting and optional DIN-Rail mounting
- Industrial temperature design - working temperature: -40° F to 185° F (-40°C to 85° C)
- In POINT-TO-POINT serial configurations, supports interchangeable serial protocol compatibility

1.4 PACKAGE CONTENTS

The ETH-SER-EE9 is supplied with the following:

- 1) ETH-SER-EE9 serial device server unit
- 2) 3 ft. Ethernet cable
- 3) 120VAC/240VAC to 12V DC power adapter
- 4) ETH-SER-EE9 software / documentation CD
 - a. ETH-SER-EE9 user manual
 - b. VSP management software
 - c. VSP management user manual
 - d. AT command user guide
 - e. SUDT AccessPort serial terminal software
 - f. SUDT AccessPort user manual
- 5) ETH-SER-EE9 datasheet

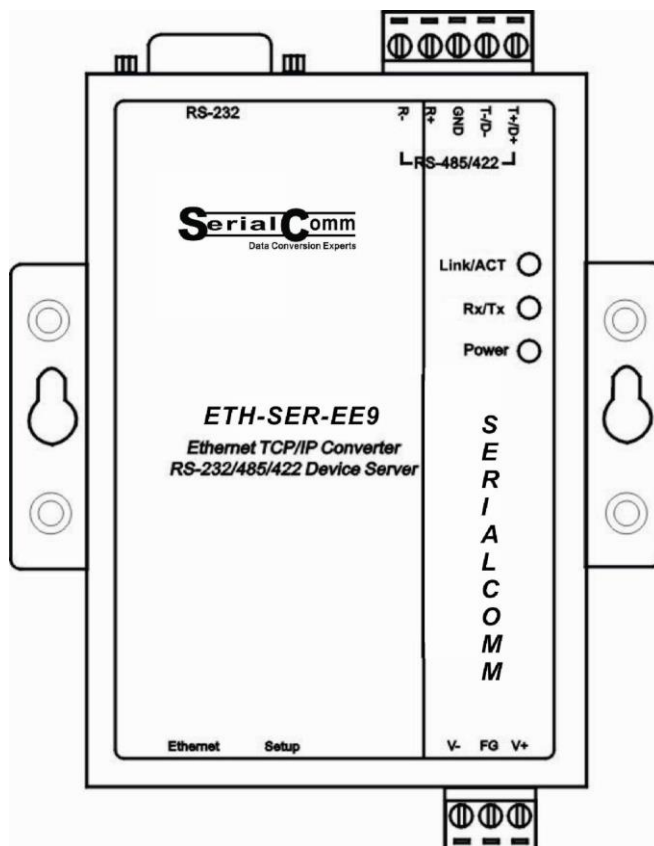


FIGURE 1.1 – PACKAGE CONTENTS

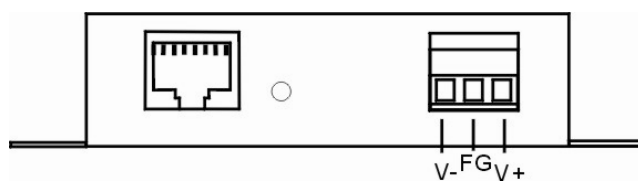
2 ETH-SER-EE9 HARDWARE DETAILS

2.1 TOP AND SIDE VIEW DRAWINGS

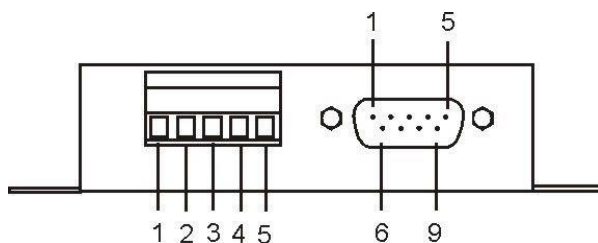
2.1.1 TOP VIEW:



2.1.2 SIDE 1 VIEW:



2.1.3 SIDE 2 VIEW:



2.2 HARDWARE INTERFACE DESCRIPTION

2.2.1 10/100BASE-T(X) ETHERNET PORT:

The 10/100BaseT(X) port (RJ45 female – SEE FIGURE 2.1) is located on ETH-SER-EE9 front panel. The pinout of RJ45 port is shown below in FIGURE 2.2. Connect the Ethernet RJ45 port with Unshielded Twisted Pair (UTP) or Shielded Twisted Pair (STP). The transmission distance cannot be more than 330 ft. (100m). If 100Mbps is used then the UTP must be 100Ω. If 10Mbps is used the UTP pins 3, 4, 5 must be 100Ω.

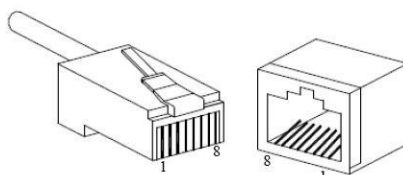


FIGURE 2.1 - RJ45 MALE AND FEMALE CONNECTORS

The RJ45 port supports automatic MDI/MDI-X functionality. MDI is straight through wiring while MDI-X is crossed wiring (SEE FIGURE 2.2).

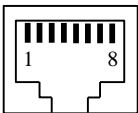
	PIN	MDI SIGNAL	MDI-X SIGNAL
	1	TX+	RX+
	2	TX-	RX-
	3	RX+	TX+
	6	RX-	TX-
	4, 5, 7, 8	----	----

FIGURE 2.2 – RJ45 PINOUT

2.2.2 RS-232/RS-485/RS-422 SERIAL INTERFACE

The other side panel of the converter has a RS-232 DB9 male connector and a 5 position RS-485/RS-422. SEE FIGURE 2.3. It is important to note that only one serial port can be used at a time. Also in a POINT-TO-POINT configuration or master / slave configuration different serial port protocols can be used reliably. For instance RS-232 and be used on one end and RS-485 or RS-422 can be used on the other end. Another example is RS-485 on one end and RS-422 on the other.

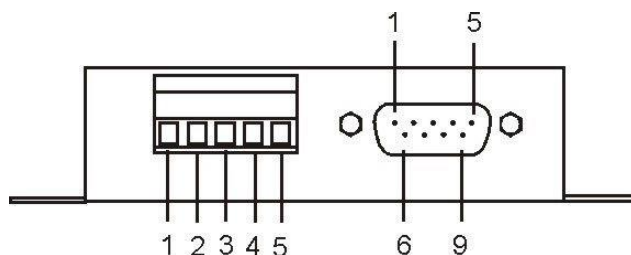


FIGURE 2.3 – SERIAL CONNECTOR VIEW

2.2.2.1 RS-232 DB9 PINOUT

FUNCTION	NC	RxD	TxD	DTR	GND	DSR	RTS	CTS	NC
PINOUT	1	2	3	4	5	6	7	8	9

FIGURE 2.4 - RS-232 DB9 PINOUT

2.2.2.2 RS-485/RS-422 TERMINAL BLOCK PINOUT

PINOUT	1	2	3	4	5
RS-422	TX+	TX-	GND	RX+	RX-
RS-485	D+	D-	GND		

FIGURE 2.5 – RS-485/RS-422 5 POSITION TERMINAL BLOCK PINOUT

2.2.3 POWER INTERFACE

The ETH-SER-EE9 has a 3-wire terminal block accommodating from 9V to 48V DC. It has a very low power consumption of about 1.4W.

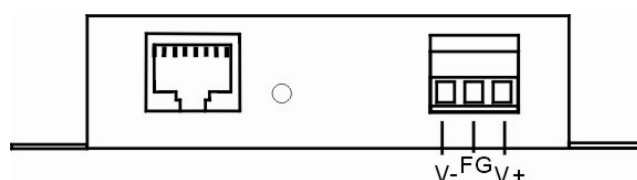


FIGURE 2.6 – POWER TERMINAL BLOCK PINOUT

2.2.4 LED INDICATORS

The ETH-SER-EE9 has 3 LED Indicators: Power, Link/ACT, and Rx/Tx (SEE FIGURE 2.7) defined as follows:

- When power is applied the Power LED will glow solid green
- When there is network connectivity the Link/ACT LED will glow solid green
- When there is serial transmission the Rx/Tx LED will blink

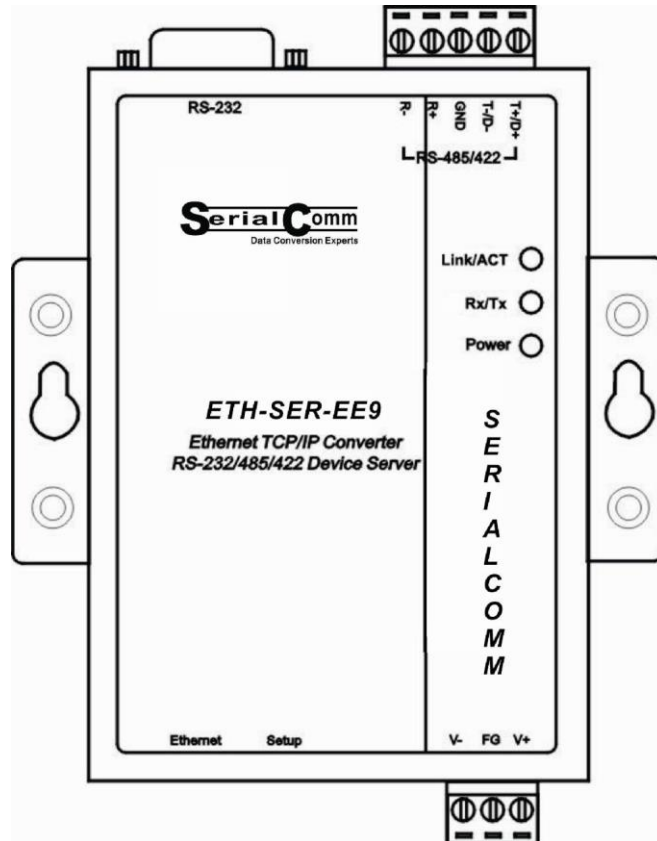


FIGURE 2.7 – TOP PANEL VIEW WITH LABELED LEDs

2.3 DIMENSIONS

The dimension units are both in English and metric systems.

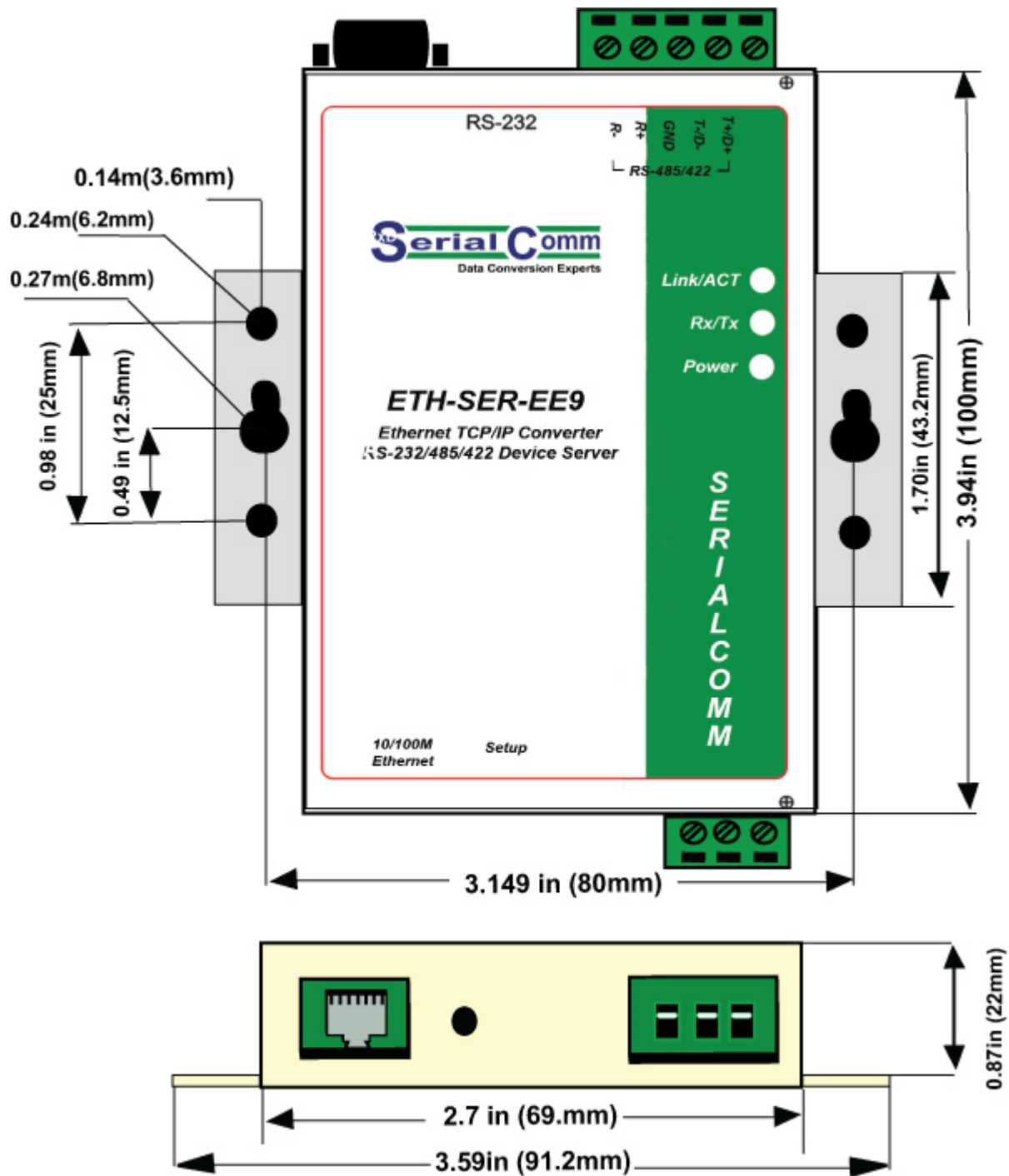


FIGURE 2.8 – ETH-SER-EE9 DIMENSION DRAWING

2.4 SPECIFICATIONS

GENERAL	
MODEL NUMBER:	SER-ETH-EE9
STANDARDS:	IEEE 802.1 10Base-T, IEEE 802.3u 100Base-T, EIA/TIA RS-232C, 2-wire RS-485 & 4-wire RS-422 Standards
ETHERNET PROPERTIES	
SUPPORTED PROTOCOLS:	TCP, UDP, APR, ICMP and DHCP Protocols
WORKING MODES:	Server and Client Modes
DATA SPEED:	10 / 100 Mbps
TRANSMISSION TYPE:	Full-duplex or Half-duplex
CONNECTOR TYPE:	RJ45
TRANSMISSION DISTANCE:	Up to 330 ft. (100 m)
CABLING:	CAT 3, 4, or 5
SIGNALING:	TX+, TX-, RX+, RX-
SERIAL PROPERTIES	
SERIAL INTERFACES:	1 Port RS232 and 1 Port RS485/RS422
DATA SPEED:	300 bps to 115,200 bps
TRANSMISSION TYPE:	Full-duplex (RS-232/RS-422) or Half-duplex (RS485)
CONNECTOR TYPE:	RS-232: DB9 Male, RS-485/RS-422: 5 Position Terminal Block
TRANSMISSION DISTANCE:	RS-232: 50 ft. (15 m), RS-485/RS-422: 4000 ft. (1200 m)
RS-232 SIGNALING:	TX, RX, RTS, CTS, DTR, DSR, GND
RS-485 SIGNALING:	D+ (A), D- (B), GND
RS-422 SIGNALING:	TX+, TX-, RX+, RX-, GND
PARITY BIT OPTIONS:	None, Even, Odd, Space, Mark
DATA BIT OPTIONS:	5 Bit, 6 Bit, 7 Bit, 8 Bit
FLOW CONTROL OPTIONS:	None, RTS/CTS (Hardware) or XON/XOFF (Software)
MAX # OF CONNECTIONS:	RS-485/RS-422: 32 Connection Nodes
DIRECTION CONTROL:	Auto Sensing / Auto Turnaround
ELECTRICAL	
POWER SOURCE:	9-48VDC
DC/AC POWER ADAPTER:	Included 12VDC / (100 - 240VAC 50/60hz US Type A Plug) 1 A
POWER CONSUMPTION:	Approximately 1.4 Watts
LAN STATIC PROTECTION:	1.5KV Electric Static Discharge (ESD) Protection
SERIAL STATIC PROTECTION:	15KV ESD Protection
SURGE PROTECTION:	1500 W/Sec Surge Protection
MECHANICAL	
HOUSING:	Heavy Duty Steel Housing
DIN RAIL:	Optional DIN Rail Mounts
WEIGHT:	18.70 oz. (530.0 grams)
DIMENSIONS:	3.94" X 2.70" X 0.87" (100 mm X 69 mm X 22 mm)
ENVIRONMENTAL	
OPERATING TEMP:	-40° F to 185° F (-40°C to 85° C)
STORAGE TEMP:	-40° F to 185° F (-40°C to 85° C)
OPERATING HUMIDITY:	5% To 95% - No Condensation
QUALITY	
PRODUCT SAFETY:	CE, FCC and RoHS Conformance Certified
QUALITY MANAGEMENT:	Manufactured and Distributed to ISO-9001:2008 Standards
RELIABILITY:	Low Failure Rate – 99+% Reliability Since Inception
WARRANTY:	5 Year Replacement Warranty

2.5 APPLICATION TECH DRAWINGS

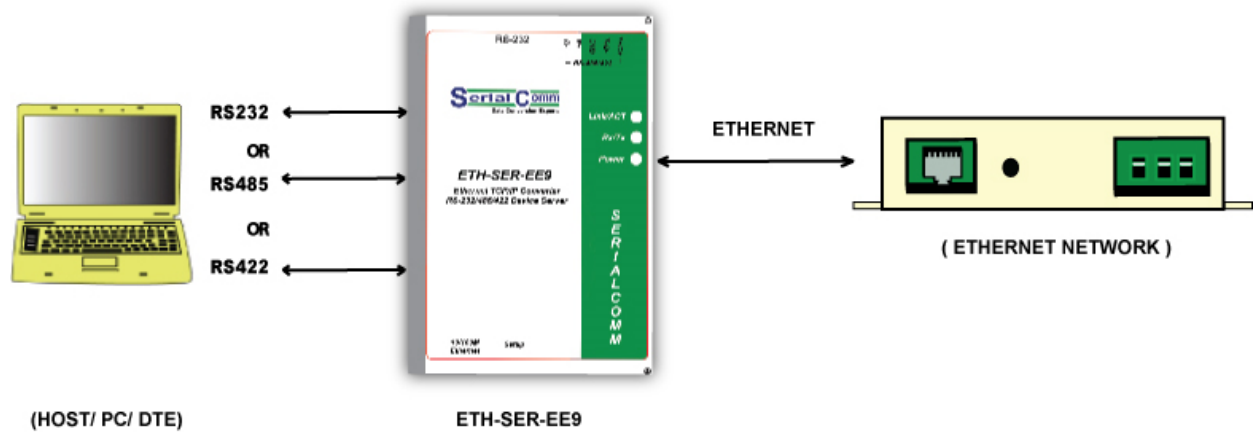


FIGURE 2.9– SERIAL TO ETHERNET – POINT-TO-POINT CONFIGURATION

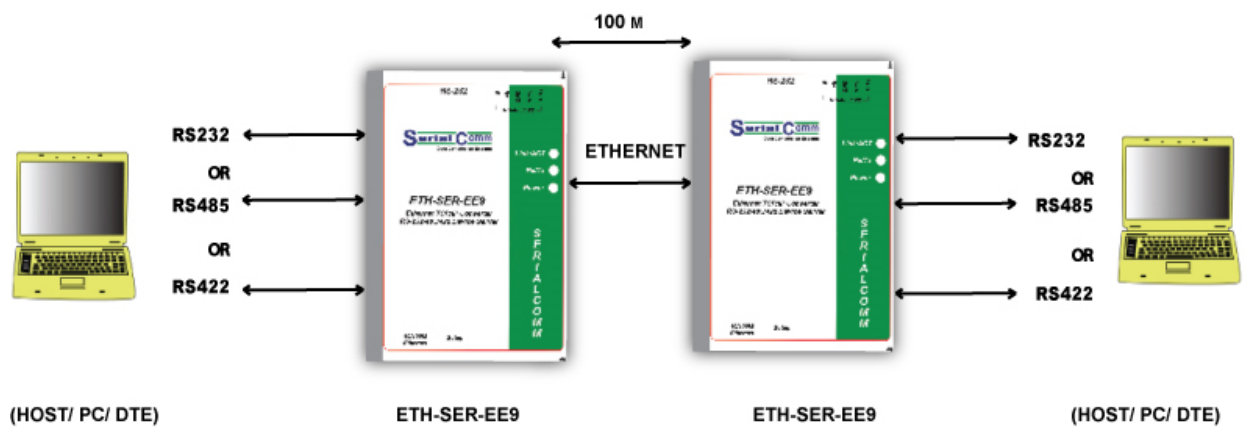


FIGURE 2.10 – SERIAL-TO-SERIAL VIA ETHERNET - POINT-TO-POINT CONFIGURATION

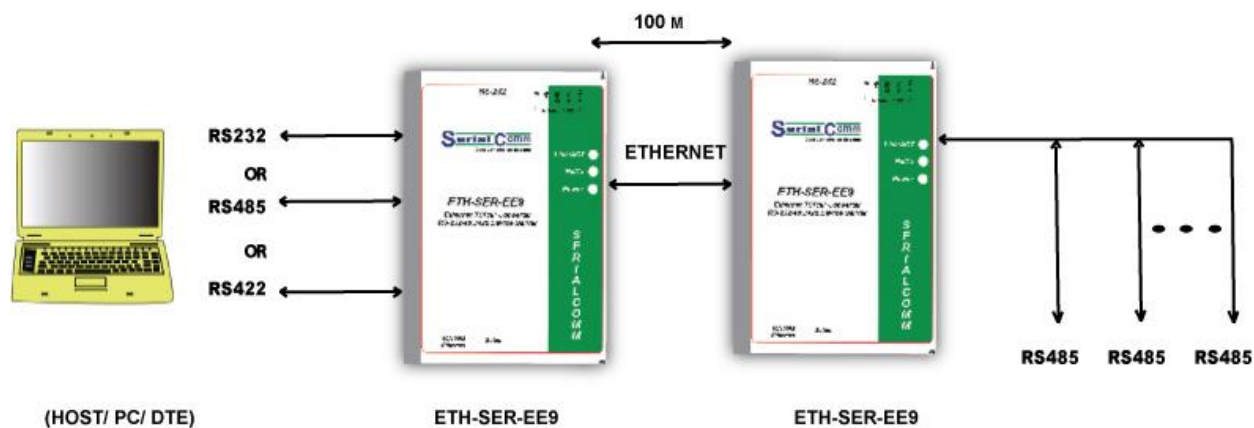


FIGURE 2.11 – SERIAL TO RS-485 VIA ETHERNET - MASTER / SLAVE CONFIGURATION

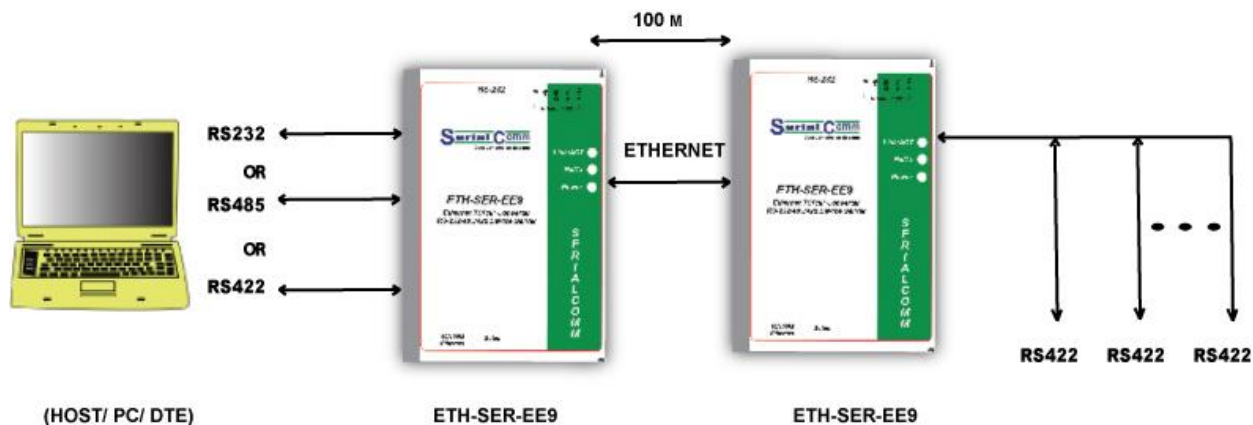


FIGURE 2.12 – SERIAL TO RS422 VIA ETHERNET - MASTER / SLAVE CONFIGURATION

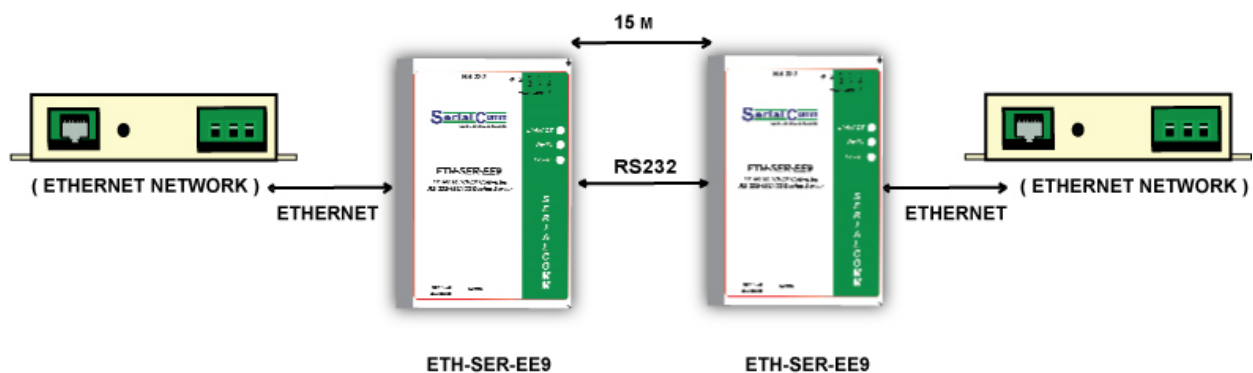


FIGURE 2.13 – ETHERNET TO ETHERNET VIA RS-232 – POINT-TO-POINT CONFIGURATION

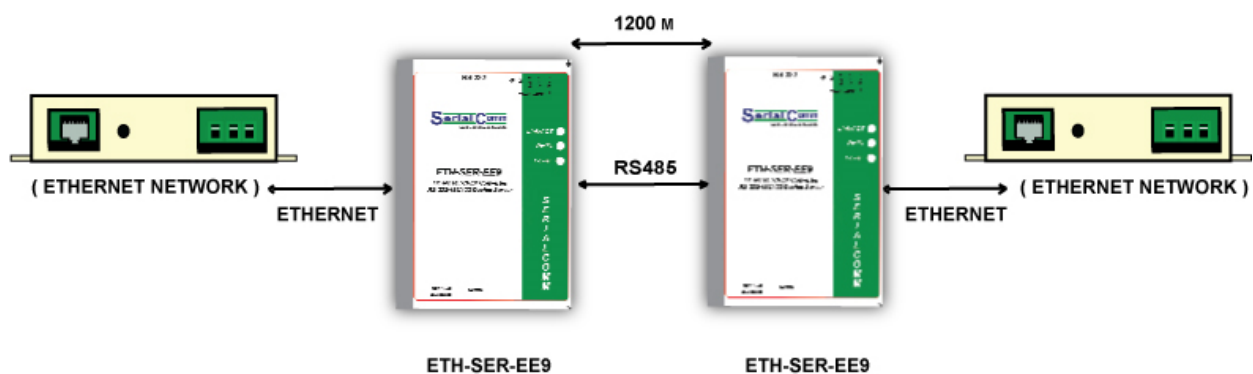


FIGURE 2.14 – ETHERNET TO ETHERNET VIA RS-485 - POINT-TO-POINT CONFIGURATION



FIGURE 2.15 – ETHERNET TO ETHERNET VIA RS-422 – POINT-TO-POINT CONFIGURATION

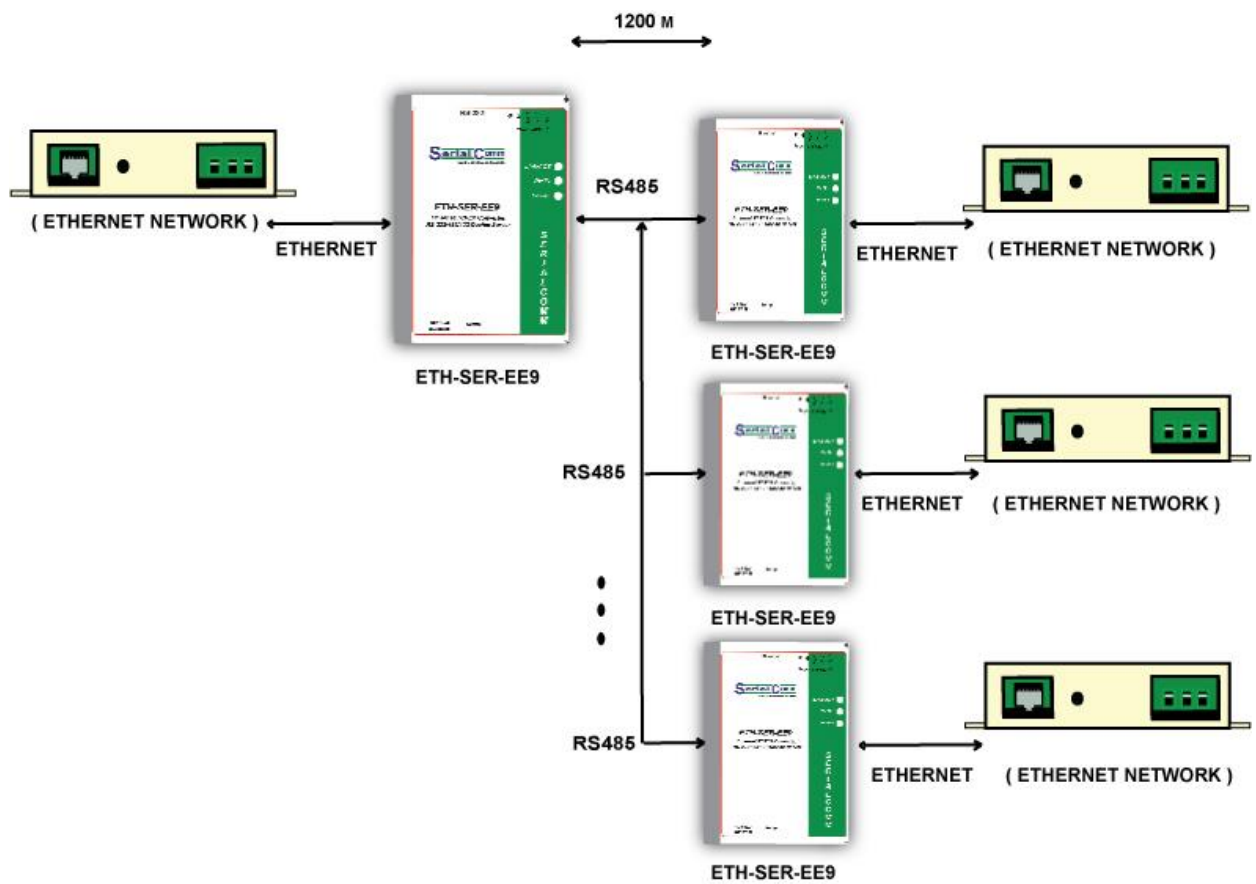


FIGURE 2.16 - ETHERNET TO ETHERNET VIA RS-485 – MASTER / SLAVE CONFIGURATION

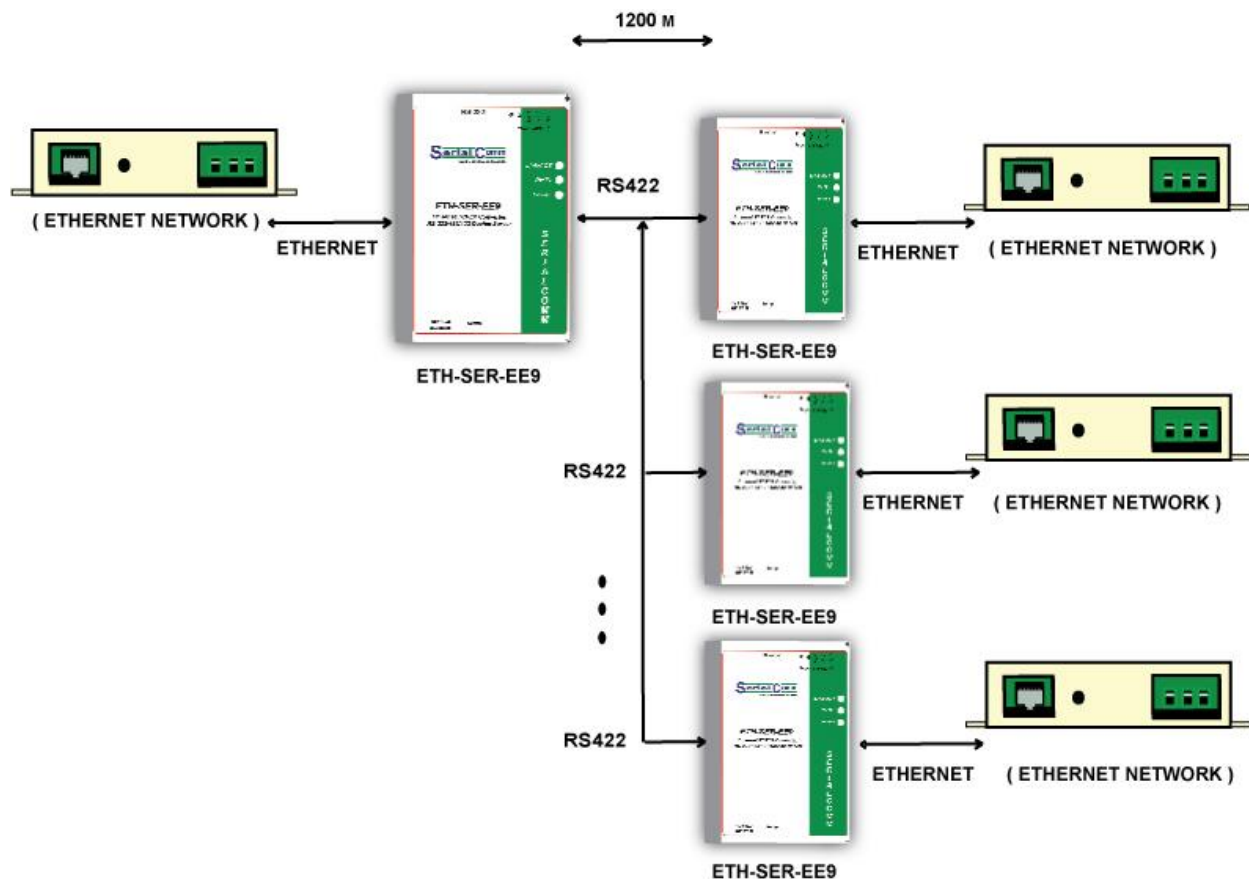


FIGURE 2.17 – ETHERNET TO ETHERNET VIA RS-422 - MASTER /SLAVE CONFIGURATION

3 ETH-SER-EE9 SOFTWARE DETAILS

3.1 ETH-SER-EE9 SOFTWARE CONFIGURATION OVERVIEW

There are three software configuration components to the ETH-SER-EE9: WEB Browser Management Tool, VSP Configuration Management Software and the AT Command Configuration Set.

The WEB browser Tool is the main ETH-SER-EE9 configuration management system. It is very simple to use. Its main functions are to display and modify device information, mode settings, provide system tools. The WEB browser Tool will be converted in detail in this manual.

The VSP Management Software is the ETH-SER-EE9 device management system. It is very simple to use. It has two main functions 1) to manage the network settings of the ETH-SER-EE9 and to define and 2) manage a virtual serial COM port. The VSP Management Software will be covered in detail in the Serialcomm VSP management software V1.2.7 User Manual. The application examples in this manual also demonstrate how the VSP is used.

The ETH-SER-EE9 can be configured by the serial port using the AT Command Set. The

AT Command Set is a standard configuration interface that configures and displays the main functions of ETH-SER-EE9. It is an option to use the AT Command Set and is not necessary if configuring the Ethernet port with the VSP software management system and built in browser-based configuration tool. The AT Command set is covered in detail in the Serialcomm ETH-SER-EE9 AT Command Configuration Guide.

3.2 THE WEB BROWSER CONFIGURATION TOOL PREPARATION

Prior to use please make sure the computer or device hosting the ETH-SER-EE9 meets these requirements.

- 1) The software supports Microsoft. Windows 2000, XP, Vista, Server 2003, 2008, 2013, Windows 7 32 bit and 64 bit and Windows 8 32 bit and 64 bit.
- 2) Before installation of the software, it is important to temporarily turn of the Windows firewall and antivirus software. You can later turn them back on and allow rules to prevent the IP you will be using from being blocked by the firewall or anti-virus.
- 3) The computer has an optional Ethernet card and/or Ethernet connection.
- 4) The computer has Internet Explorer, Mozilla Firefox, Google Chrome, Safari or similar WEB browser.
- 5) Clear the internet cache and temporary files.

The ETH-SER-EE9 default IP address is 192.168.1.254 subnet mask 255.255.255.0. When the ETH-SER-EE9 is accessed through the web browser. The Local Area Network portion of the IP address must be the same. The device IP must be unused portion of the IP network portion making the device IP address unique. There are two methods to do this; one is to change the IP of the PC/laptop to match that of the ETH-SER-EE9 (not possible in WIN 7 and WIN 8) or change the IP of the ETH-SER-EE9 to match that of the PC/laptop/connecting network. The IP can be changed on the ETH-SER-EE9 using the VSP Management Software. Also the Virtual COM port can be established there to. See The VSP Management User Guide and application examples to see how this is set up.

3.3 THE WEB BROWSER CONFIGURATION TOOL OPERATION

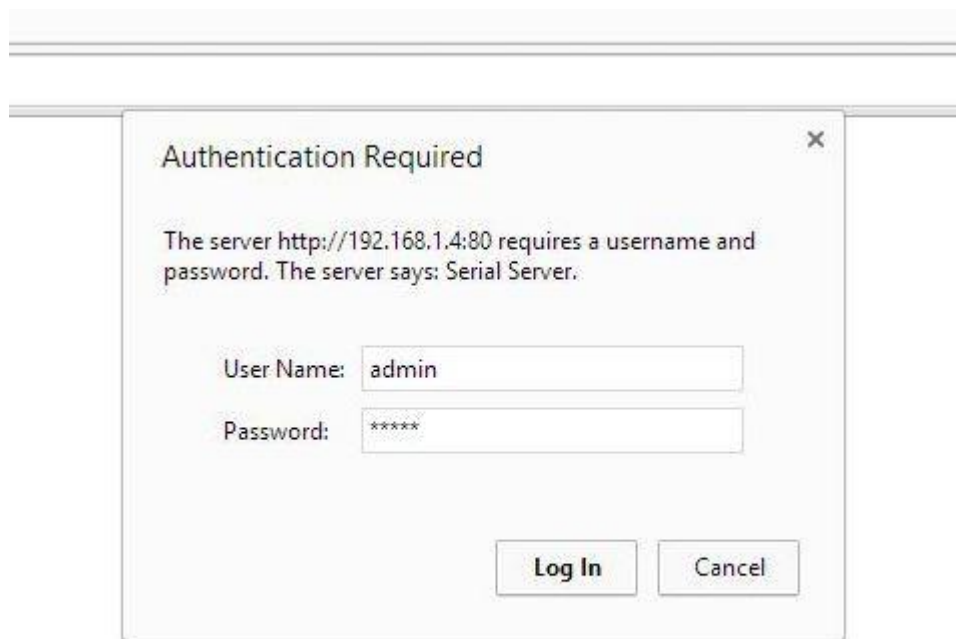
The main menu includes 3 sections: Device Information, Serial Interface Setting and System Tools. The following tables provide a short description of the 3 main sections. SEE FIGURE 3.1

Menu	Page Layout	Function
Device Information	Device Information	Modify the device name and description
	Network Information	Modify the device IP address, subnet mask, gateway, DNS etc.
Mode Setting	Serial Interface Setting	Setting serial interface - working mode, data bit, stop bit, parity bit, baud rate, data frames, character spacing, CtrlBreak default output time
	Working Mode Setting	Setting working mode - local port, destination address, destination port, connection mode, connection alive, option sessions etc.
		Enter into AT mode 3, I/O port triggering, CtrlBreak triggering and character string triggering
System Tools	Resume Factory	Resume the device with factory defaults.
	Configuration Files	Download or upload setting files (Save Configuration files, batch settings)
	System Upgrade	Upgrade device software
	Device reset	Reset ETH-SER-EE9
	User Name and Password	Modify the user name and password

FIGURE 3.1 - MAIN SECTION DESCRIPTION TABLE

3.3.1 LOGGING ONTO THE WEB BROWSER INTERFACE

- 1) Now enter the browser utility which is part of the VSP Management Software or your PC's browser and enter the IP of the device. An authorization screen will come up. The default user name is "admin" and password is "admin". (SEE FIGURE 3.2)



Authentication Required

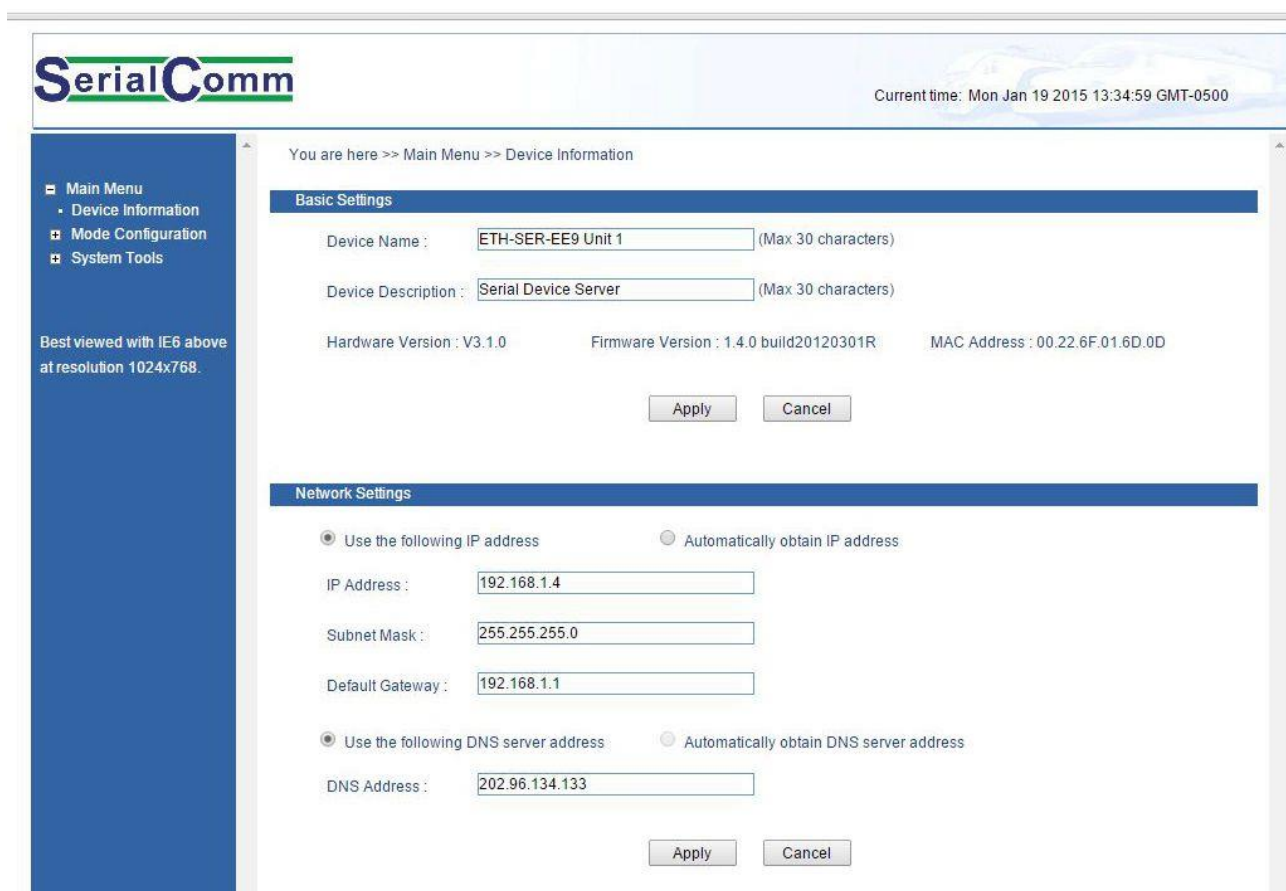
The server http://192.168.1.4:80 requires a username and password. The server says: Serial Server.

User Name:

Password:

FIGURE 3.2 – AUTHENTICATION SCREEN

2) The online configuration tool will come up. (SEE FIGURE 3.3)



SerialComm Current time: Mon Jan 19 2015 13:34:59 GMT-0500

You are here >> Main Menu >> Device Information

Main Menu

- Device Information
- Mode Configuration
- System Tools

Best viewed with IE6 above at resolution 1024x768.

Basic Settings

Device Name : (Max 30 characters)

Device Description : (Max 30 characters)

Hardware Version : V3.1.0 Firmware Version : 1.4.0 build20120301R MAC Address : 00.22.6F.01.6D.0D

Network Settings

☒ Use the following IP address ☐ Automatically obtain IP address

IP Address :

Subnet Mask :

Default Gateway :

☒ Use the following DNS server address ☐ Automatically obtain DNS server address

DNS Address :

FIGURE 3.3 – BROWSER CONFIGURATION TOOL

3.3.2 WEB BROWSER CONFIGURATION DESCRIPTION

The web configuration interface divided into three sections: 1) Title Area 2) Menu Bar and 3) Setting area. By clicking on the menu item of the vertical menu bar to enter the relevant interface. (SEE FIGURE 3.4)

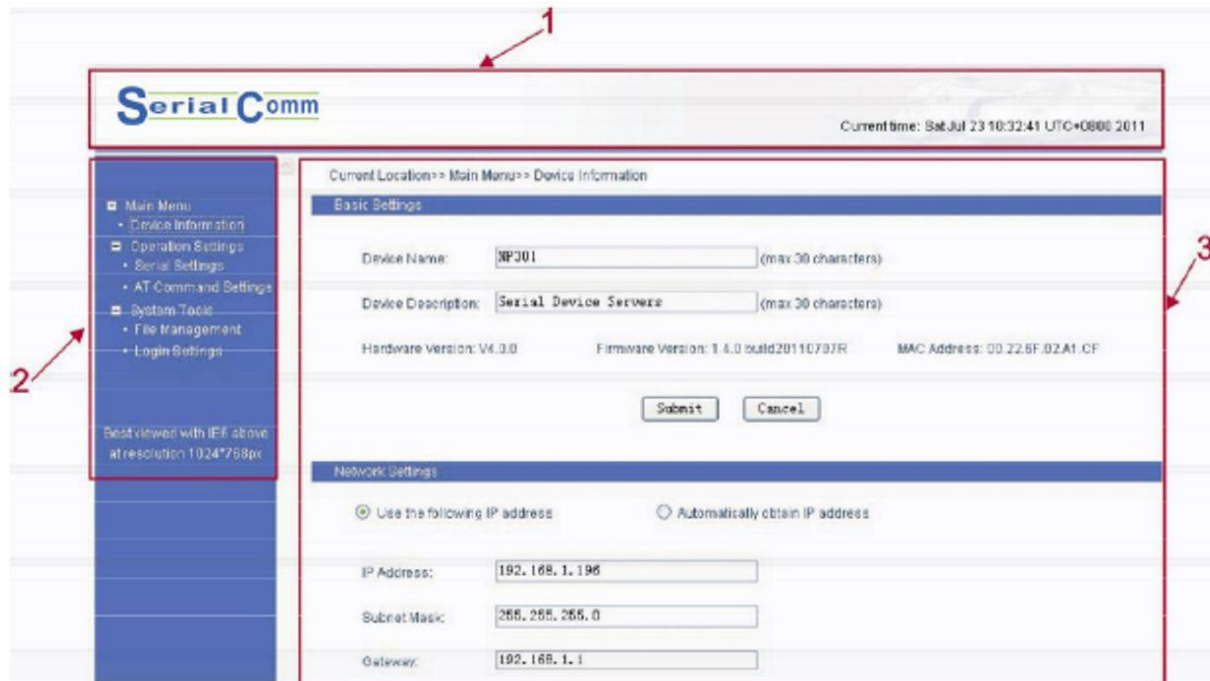


FIGURE 3.4 – LABELED MAIN SCREEN

3.3.2.1 WEB BROWSER CONFIGURATION MAIN SCREEN

The setting area of the main screen is divided into two sections the Basic Settings and Network Settings. (SEE FIGURE 3.3)

3.3.2.1.1 MAIN SCREEN BASIC SETTINGS

The Basic Settings section is divided into three sections 1) Device Name and 2) Device Description, and 3) Device Information.

3.3.2.1.1.1 DEVICE NAME

Each device on a network must be named differently. This is the place that assigns a name to the device. It can support no more than 30 characters. You can input capital letters, lowercase letters, special characters, underlines, middle lines and Chinese characters.

3.3.2.1.1.2 DEVICE DESCRIPTION

The Device Description is a description of the device. You can only enter 30 characters.

3.3.2.1.1.3 DEVICE INFORMATION

Device information includes the hardware version, software version and MAC address.

3.3.2.1.2 MAIN SCREEN NETWORK SETTINGS

The main screen network settings allow you to view and change the main network settings.

3.3.2.1.2.1 DEVICE IP SELECTIONS

You can select the IP displayed by selecting “Use the following IP address” or a automatically generated IP with “Automatically obtain IP address”. The device address setting supports 2 modes, DHCP (dynamic) IP address and static IP address. The IP address of the device can be obtained by the VSP management software. If you are connecting to a Domain Name System, please fill in the available gateway and DNS address. (SEE FIGURE 3.5)

3.3.2.1.2.2 IP ADDRESS

The IP address is a 32 bit length address that allows the device to connect to the Internet. The IP address has 2 fields: net-id and host-id. The net-id is the network portion of the IP address and the host-id is the device identification portion of the IP address. IP address can set in static IP or DHCP (dynamic). (SEE FIGURE 3.5)

3.3.2.1.2.3 SUBNET MASK

The mask is an IP address corresponding 32 bit number which consists of 1s and 0s. Mask can divide IP address into 2 parts: subnet addresses and host computer addresses. 1 allows a bit and 0 masks a bit. (SEE FIGURE 3.5)

3.3.2.1.2.4 DEFAULT GATEWAY

The default gateway in the host computer usually is called the default route. The default route is the route chosen by the router when the destination address of IP packet cannot find the existence of other routes. All packets of the destination address not in router's routing table will use the default route. (SEE FIGURE 3.5)

3.3.2.1.2.5 DNS ADDRESS

The DNS stands for Domain Name Server. The function is easy to remember the DNS name or IP for the actual IP. It resolves to the IP address that the internet can identify. If our device needs to visit some Host device, it needs to use this server to resolve an IP

address. (SEE FIGURE 3.5)

Network Settings

☒ Use the following IP address

☐ Automatically obtain IP address

IP Address:

192.168.1.254

Subnet Mask:

255.255.255.0

Gateway:

192.168.1.1

☒ Use the following DNS server address

☐ Automatically obtain DNS server address

DNS:

202.96.134.133

Submit

Cancel

FIGURE 3.5 NETWORK SETTINGS



If you need to set DHCP “automatically obtain IP address”, please ensure DHCP Server is already on the network and can obtain IP address successfully. After “automatically obtain IP address”, you will need to use VSP manager software to search the device and obtain the IP address of the device.

3.3.2.2 MAIN MENU MODE SETTINGS

The Mode Settings page is divided into two sections Serial Setting and Work Mode settings. (SEE FIGURE 3.7)

3.3.2.2.1 SERIAL SETTINGS

The serial interface settings are in the table below. (SEE FIGURE 3.6)

Serial Interface Setting Menu	Data Options
Working Mode	Full duplex/half duplex
Baud Rate (bps)	300- 115200 (10 common baud rate options)
Parity Bits	None,Even,Odd,Mark,Space
Data Bits (bits)	5,6,7,8
Stop Bits (bits)	1,2
Data Frames (bytes)	1-1024
Character Spacing (ms)	1-500
CtrlBreak default output time(ms)	0-60000

FIGURE 3.6 – SERIAL SETTINGS TABLE

The functions associated with the serial settings are “Serial Work Mode”, “Baud Rate/bps”, “Parity Bits”, “Data Bits”, “Stop Bits”, “Max Data Packets”, “Character Delay”. “Overtime Times”.

The screenshot displays the SerialComm web interface. At the top, the 'SerialComm' logo is on the left, and the current time 'Wed Jan 21 2015 15:04:56 GMT-0500' is on the right. A breadcrumb trail reads 'You are here >> Main Menu >> Mode Configuration >> Serial Settings'. The left sidebar contains a menu with 'Main Menu', 'Device Information', 'Mode Configuration' (selected), 'Serial Settings', 'AT Command Settings', and 'System Tools'. Below the menu, a note states 'Best viewed with IE6 above at resolution 1024x768.' The main content area is divided into two sections: 'Serial Settings' and 'Work Mode Settings'. The 'Serial Settings' section includes fields for 'Serial Work Mode' (RS-232), 'Baud Rate(bps)' (115200), 'Parity Bits' (None), 'Data Bits(bits)' (8), 'Stop Bits(bits)' (1), 'Max Data Packets' (500), 'Character Delay' (5), and 'Overtime Times' (201). The 'Work Mode Settings' section features a table with columns: Sessions, Work Mode, Local Port (1~65535), Destination Address, Destination Port (1~65535), Connection Mode, Keep-alive (0~65535)s, and RealCom. The table lists four sessions, all using 'TCP Serve' and '30000' as the local port. The first session is active (checked) and has a destination address of '192.168.1.4' and port '30000', with a 'Connect Now' button and an 'Open' status. The other three sessions are inactive (unchecked) and have destination addresses of '192.168.2.3' and ports '31001', '31002', and '31003' respectively, with 'Connect Now' buttons and 'Close' statuses. 'Apply' and 'Cancel' buttons are at the bottom of the table.

FIGURE 3.7 – MODES SETTINGS PAGE

3.3.2.2.1.1 SERIAL WORK MODE

The Serial Work Mode parameter is the serial protocol used RS-232, RS-485, or RS-422.

3.3.2.2.1.2 BAUD RATE/BPS

The Baud Rate/BPS parameter is the speed in which the data is transferred. It is the number of bits transmitted in 1 second. For example 300 baud rate is equivalent to 300 bits transfer per second.

3.3.2.2.1.3 PARITY BITS

The Parity Bits parameter consists of none, even, odd, mark, or space and is used to help detect packet errors. The bits must add up to odd or even etc.

3.3.2.2.1.4 DATA BITS

The Data Bits is the number of data bits in a packet. It could be either 5, 6, 7 or 8.

3.3.2.2.1.5 STOP BITS

The Stop Bits is the last bits of the packet and is an indication of when the packet is finished. It could be 1 or 2

3.3.2.2.1.6 MAX DATA PACKETS

The Max Data Packets parameter indicates the maximum amount of packets. Usually the packets make up a frame.

3.3.2.2.1.7 CHARACTER DELAY

The Character Delay parameter is the delay time from when the character enters the device till it leaves the device.

3.3.2.2.1.8 OVERTIME TIMES

The Overtime Times parameter is the CtrlBreak output time. The default is 201.
(SEE FIGURE 3.7)

3.3.2.2.2 WORK MODE SETTINGS

The Work Mode Settings are divided into 4 sessions each one contacting the following parameters: "Working Mode", "Local Area Ports", "Destination Address", "Destination Ports", "Connection Mode", "Keep-alive", "RealCom. A brief description of each is in the Work Mode settings Menu. (SEE FIGURE 3.8)

Work Mode Settings Menu	Data Options
Sessions	1-4
Working Mode	TCP Client, TCP Server, UDP, TCP AUTO
Local Area Ports	1-65535
Destination Address	XXX.XXX.XXX,XXX
Destination Ports	1-65535
Connection Mode	Immediate, Data trigger
Keep Alive	0-65535 sec
RealCom	Open, Closed

FIGURE 3.8 – WORK MODE SETTINGS MENU

3.3.2.2.2.1 SESSIONS

Each serial port of serial device servers can support 1-4 sessions. This means the serial port of serial device server sends the received data to Ethernet through a socket. More than one of the sessions means serial port of serial device server sends the received data to Ethernet through more than one socket.

3.3.2.2.2.2 LOCAL AREA PORT

The Local Area Port is unique and unused service port the originating TCP/IP network equipment communicating with the ETH-SER-EE9. There are options from 1 to 65535.

3.3.2.2.2.3 DESTINATION ADDRESS

The destination address is the IP of the destination TCP/IP Network equipment that the ETH-SER-EE9 will talk to.

3.3.2.2.2.4 DESTINATION PORT

The Local Area Port is unique and unused service port the destination TCP/IP network equipment communicating with the ETH-SER-EE9. There are options from 1 to 65535.

3.3.2.2.2.5 CONNECTION MODE

The Connection Mode Parameter defines if you want to connect immediately or using a data as a trigger. You can have the ETH-SER-EE9 connect immediately as soon as power is turned on or when the first transmission of data is detected.

3.3.2.2.2.6 KEEP-ALIVE

The Keep-Alive parameter is necessary to specify how long to shut off the unit after data stops. The values could be from 0-65535 seconds. If 0 is chosen then it does not care when data stops.

3.3.2.2.2.7 REALCOM

The RealCom parameter is used in conjunction with the baud rates synchronization of the virtual serial port defined in the VSP. Basically if you are not using a VSP defined virtual serial port the RealCom parameter will be "Closed". If you are using the VS defined virtual serial port then the RealCom parameter will be "Opened".

3.3.2.2.2.8 WORKING MODE

The Working Mode Parameter defines how the device will talk to the TCP/IP network equipment. There are four modes: TCP Client, TCP Server, UDP, and TCP Auto. Each Mode is set up differently.

3.3.2.2.2.8.1 TCP CLIENT

As the TCP Client, the serial device server will connect directly to the TCP/IP network equipment, such as a PC or laptop. We will need to setup the serial device server to connect with the network address and TCP port number. After creating a socket, the serial device server will be sent data from each serial port through the socket. On the contrary, the data received from the socket will be sent to the corresponding serial port.

If TCP Client is selected then the following parameters must be specified: "Local Port", "Destination Address", "Destination Port", "Connection Mode", "Keep-Alive" and "RealCom".

3.3.2.2.2.8.2 TCP SERVER

As the TCP Server, the serial device server will passively connect to the network.

If TCP Server is selected then the following parameters must be specified: "Local Port".

3.3.2.2.2.8.3 UDP

As the UDP, the serial device server is both the server and client. It will support POINT-TO-POINT and multicast UDP.

If UDP is selected then the following parameters must be specified: "Local Port", "Destination Address", "Destination Port", "Connection Mode", "Keep-Alive" and "RealCom".

3.3.2.2.2.8.4 TCP AUTO

As the TCP AUTO, the serial device server can act as either the server or client.

If TCP AUTO is selected then the following parameters must be specified: “Local Port”, “Destination Address”, “Destination Port”, “Connection Mode”, “Keep-Alive” and “RealCom”.

3.2.2.3 AT COMMAND MODE

The AT Command Mode can be defined by the AT Command Settings screen. There are three methods of AT Command definitions: “I/O Port trigger”, “CtrlBreak trigger”, and “Character strings trigger (Hex)”. The following menu has short descriptions for each trigger method. (SEE FIGURE 3.9)

AT Command Mode	Instruction
I/O Port Trigger	AT Command Mode entered by hardware trigger
CtrlBreak Trigger	AT Command Mode entered by Ctrl+PauseBreak software trigger
Character Strings trigger (HEX)	AT Command Mode entered by strings on through the serial port

FIGURE 3.9 – AT COMMAND MODE TRIGGERS

3.2.2.3.1 I/O PORT TRIGGER

By triggering the corresponding pin of the IC chip, you can enter the AT command setting mode. By default, 24 pin is high level. Changing it to a low level, will enter AT Command Mode through I/O port trigger. Since the ETH-SER-EE9 is sealed you will not have access to this trigger method.

3.2.2.3.2 CTRLBREAK TRIGGER

You can enter this trigger mode in two ways 1) Opening a Virtual Serial Port, click “Ctrl+PauseBreak”, then open Web page of ETH-SER-EE9, click [Operation Settings/AT Command Settings] to enter into AT Command. 2) Select CtrlBreak trigger on this page.

3.2.2.3.3 CHARACTER STRINGS TRIGGER (HEX)

By setting “Character” in “Character Strings Trigger (Hex)”. “Serial Settings”, you can send predefined characters to serial port through software to enter into AT Command Mode.

3.2.2.3.4 AT COMMANDS

The AT Commands are defined and discussed in the AT Command Configuration Guide included in the CD supplied with the ETH-SER-EE9.

3.2.2.4 SYSTEM TOOLS

The system tools includes: Restore factory default settings, Configuration file, System Upgrade, System reset, and Modify user name and password. (SEE FIGURE 3.10)

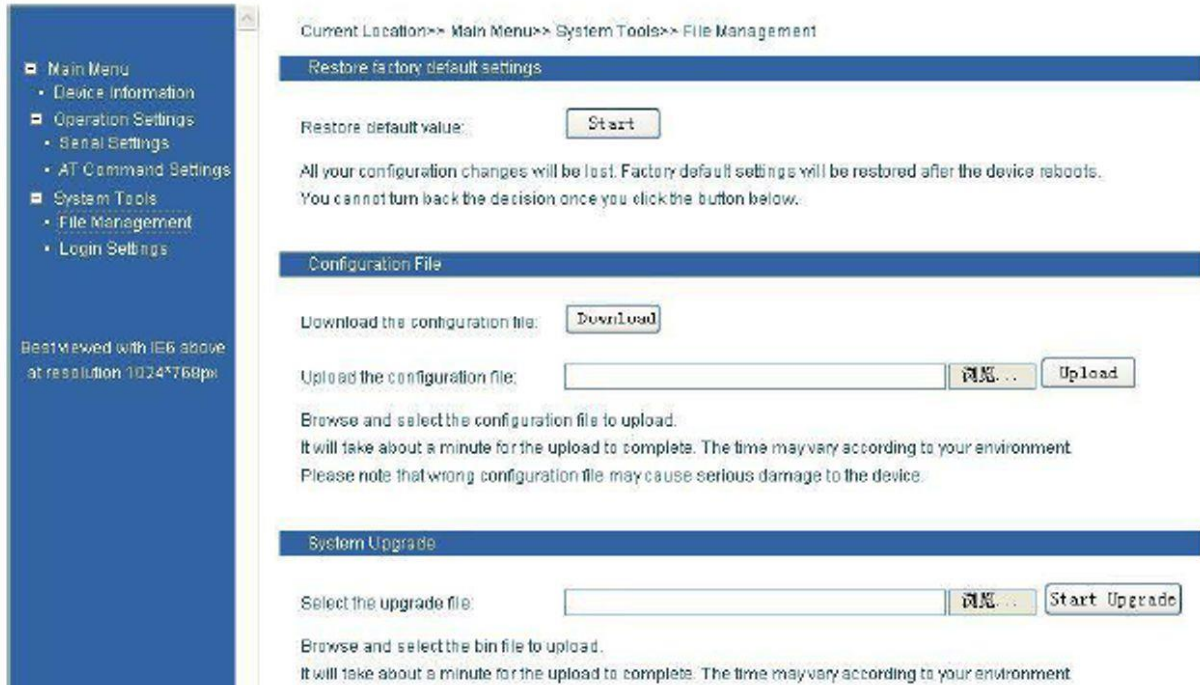


FIGURE 3.10 - SYSTEM TOOLS

3.2.2.4.1 RESTORE FACTORY DEFAULT SETTINGS

Restore Factory defaults settings puts the serial device server in its original factory settings. Follow the following steps:

- 1) Click "System tools"
- 2) Click "File management"
- 3) Choose "Restore default value"
- 4) Click <Start>
- 5) **ALARM** "Restore factory default file "192.168.1.254" will cover your configuration, please confirm Yes or No?"
- 6) Choose Yes or No
- 7) It will open a new interface, input "192.168.1.254" to make new configuration.

3.2.2.4.2 DOWNLOAD CONFIGURATION FILE

Downloads the configuration file. Follow the following steps:

- 1) Click "System tools"
- 2) Click "File management" label
- 3) Choose download configuration files

- 4) Click <Download>
- 5) Choose directory name to save the files

3.3.3.4.3 UPLOAD CONFIGURATION FILE

Uploads the configuration file. Follow the following steps:

- 1) Click "System tools"
- 2) Click "File management"
- 3) Choose "Upload Files"
- 4) Click <Upload>
- 5) After updating, it will open a new interface: "System status"

3.2.2.4.4 SYSTEM UPGRADE

Updates the system. Follow the following steps:

- 1) Click "System tools"
- 2) Click "File management"
- 3) Choose "Select the upgrade files"
- 4) Click <Start Upgrade>

Notice: Do not turn off power while upgrading.

- 5) After updating, it will open a new interface: "System status"

3.2.2.4.5 SYSTEM RESTART

Performs a system restart. Follow the following steps.

- 1) Click "System tools"
- 2) Click <Restart>

After 20 seconds the browser will go back to the WEB login interface. Please save the configuration before restarting, otherwise the configuration information will be lost.

3.2.2.4.6 USER NAME AND PASSWORD

The default user name and password is "admin" for both. You can change the username and password through this interface by selecting System tools / Login settings.

Enter the new user name and password and retype password in the login settings.



Login settings

Login's Name:

Login's Password:

Retype password:

FIGURE 3.11 – MODIFY NAME AND PASSWORD

4 APPLICATION EXAMPLES

Three application examples will be presented demonstrating how the ETH-SER-EE9 can be configured in loopback mode, serial-to-serial - POINT-TO-POINT mode and Ethernet to Ethernet - POINT-TO-POINT mode. In the three examples, freeware AccessPort, a serial terminal / monitor program, is used however it is optional. AccessPort and its manual are included in the CD supplied with the ETH-SER-EE9 and on our website www.serialcomm.com.

4.1 APPLICATION 1 – LOOPBACK MODE

4.1.1 APPLICATION 1 OVERVIEW

A loopback test is a very useful way of determining whether a serial port, attached device, Ethernet port and virtual COM port are functioning properly. A loopback test can be performed on a serial RS-232, RS-485 or RS-422 port on a PC or laptop and an Ethernet port on the same computer. (SEE FIGURE 4.1)

In this example, we will be looping back to our ETH-SER-EE9 converter by connecting the ETHERNET PORT directly to the PC/laptop or to the connecting LAN Network and serial port. The RS-232 will be connected to the DB9 connector of the converter. Since the ETH-SER-EE9 is a DTE (Server), a null modem crossover cable or adapter must be used when connecting it to a PC via the RS-232 port. We will be using a USB to RS-232 adapter (USB-232-2) because the computer we are using does not have a serial port. We will need to open two instances of AccessPort since the looped back data will be transmitted and received by two different ports. However, before setting up this configuration we must first configure the converter with the VSP Management Software.

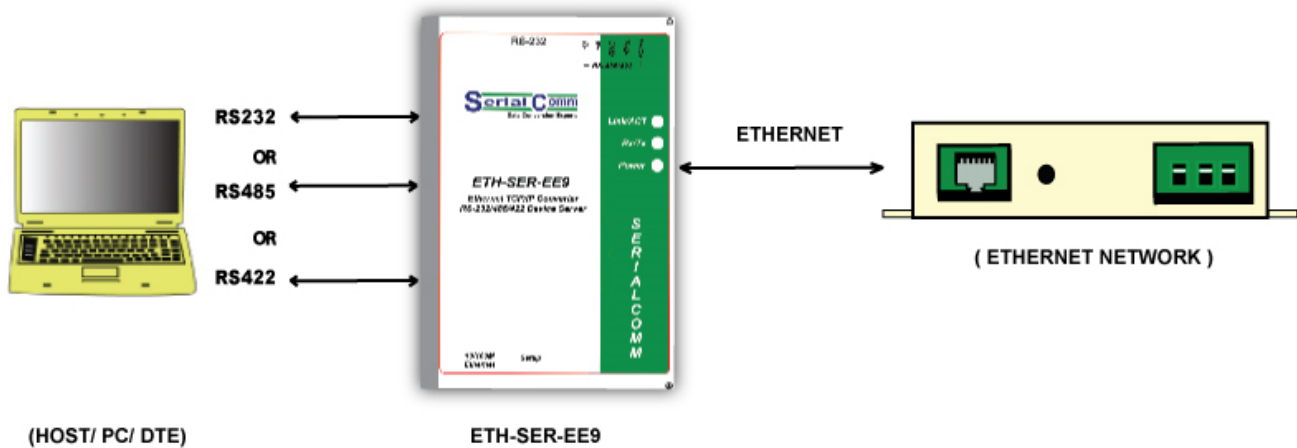


FIGURE 4.1 – LOOPBACK MODE

4.1.2 INSTALLATION OF THE VSP MANAGEMENT CONFIGURATION SOFTWARE

The VSP Management Software must be first installed on the host Windows based PC or laptop that will connect to the ETH-SER-EE9 via an Ethernet network. See Section 2 and 3 of the VSP Management V1.2.7 User Manual included in the software CD supplied with the ETH-SER-EE9.

4.1.3 INSTALLATION OF THE ETH-SER-EE9 SERIAL DEVICE SERVER

Now that the VSP Management Software is installed, in order for it to function properly it needs to communicate with the ETH-SER-EE9. The ETH-SER-EE9 now needs to be connected to the host with the VSP software installed.

- 1) The ETH-SER-EE9's default IP address is 192.168.1.X subnet 255.255.255.0 for the network segment. The default user name is admin and the default password is admin. These default settings will be changed later after installation.
- 2) Unpack the ETH-SER-EE9. It includes the unit, a power supply, and an Ethernet cable.
- 3) Connect the power supply to the converter. Wire V+ of the power supply goes to terminal post V+ of the converter and wire V- of the power supply goes to terminal post V- of the converter.
- 4) Power the ETH-SER-EE9. The power green LED should be lit.
- 5) Connect the Ethernet cable to the ETH-SER-EE9; either directly to the PC, laptop, or to the connecting network. Once the Ethernet cable is attached, the green Link/ACT LED should be lit.

4.1.4 ETH-SER-EE9 SERIAL DEVICE SERVER CONFIGURATION USING THE VSP MANAGEMENT SOFTWARE

The ETH-SER-EE9 default IP address is 192.168.1.254 subnet mask 255.255.255.0. When the ETH-SER-EE9 is accessed through the web browser, the Local Area Network

portion of the IP address must be the same. The device IP must be unused portion of the IP network portion making the device IP address unique. There are two methods to do this; one is to change the IP of the PC/laptop to match that of the ETH-SER-EE9 (not possible in WIN 7 and WIN 8) or change the IP of the ETH-SER-EE9 to match that of the PC/laptop/connecting network. In this example we will be changing the IP address of the ETH-SER-EE9.

- 1) The first step is to find out what is the IP of the PC/laptop/connecting network. This can be done from the PC/laptop WIN control panel.

Control Panel → Network and Internet → Network and Sharing Center → Connect of Ethernet Connections → Details

- 2) You will see the Ethernet IP and subnet mask. Our IP address is 192.168.1.3. Our subnet mask is 255.255.255.0 and Default Gateway is 192.168.1.1. Your information will be different. (SEE FIGURE 4.2)

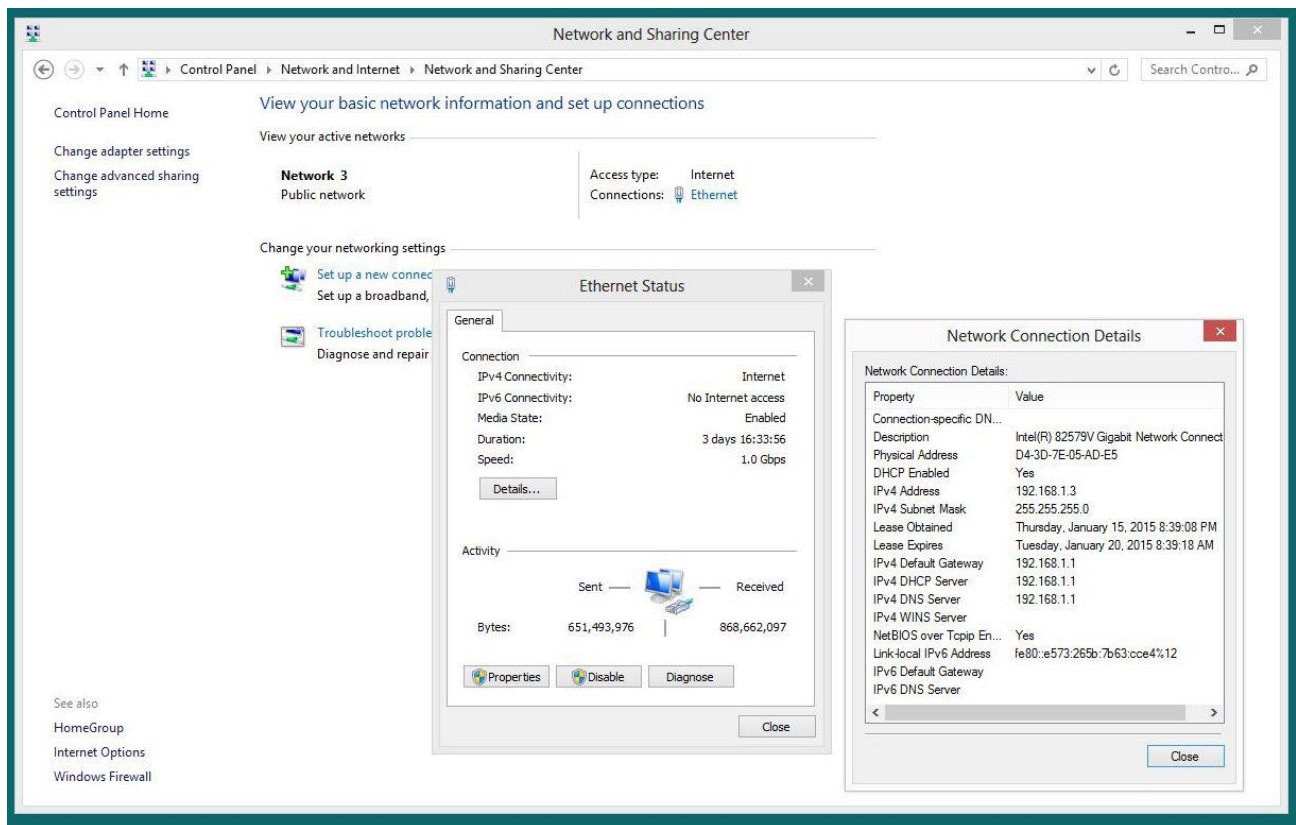


FIGURE 4.2 – PC/LAPTOP LAN INFORMATION

- 3) Make sure the ETH-SER-EE9 is connected to power and the Ethernet cable is connected to the PC directly or indirectly.
- 4) Run the VSP management software. (SEE FIGURE 4.3)

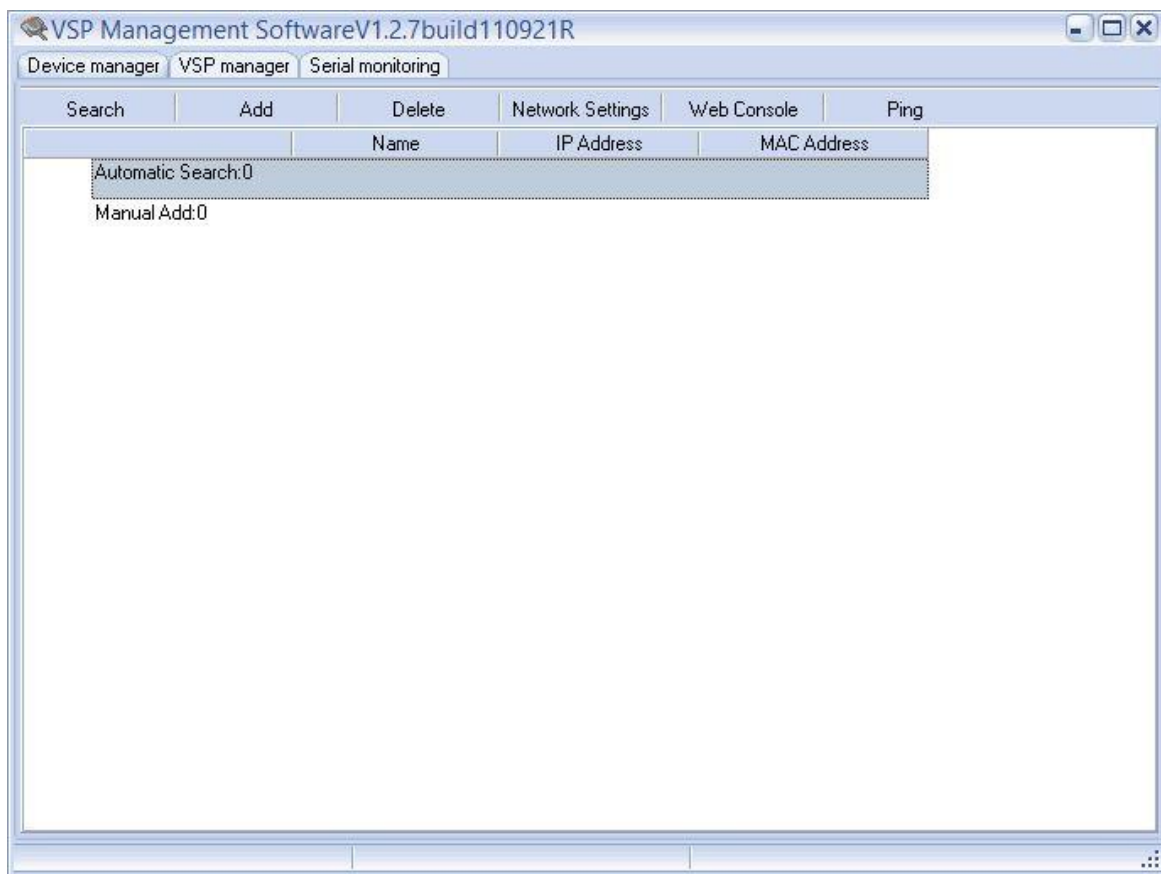


FIGURE 4.3 – VSP MANAGEMENT SOFTWARE

- 5) Search for the attached ETH-SER-EE9 device. Our name is ETH-SER-EE9 Unit 1, IP 169.254.138.241 MAC 00-22-6F-01-6D-0D. (SEE FIGURE 4.4)

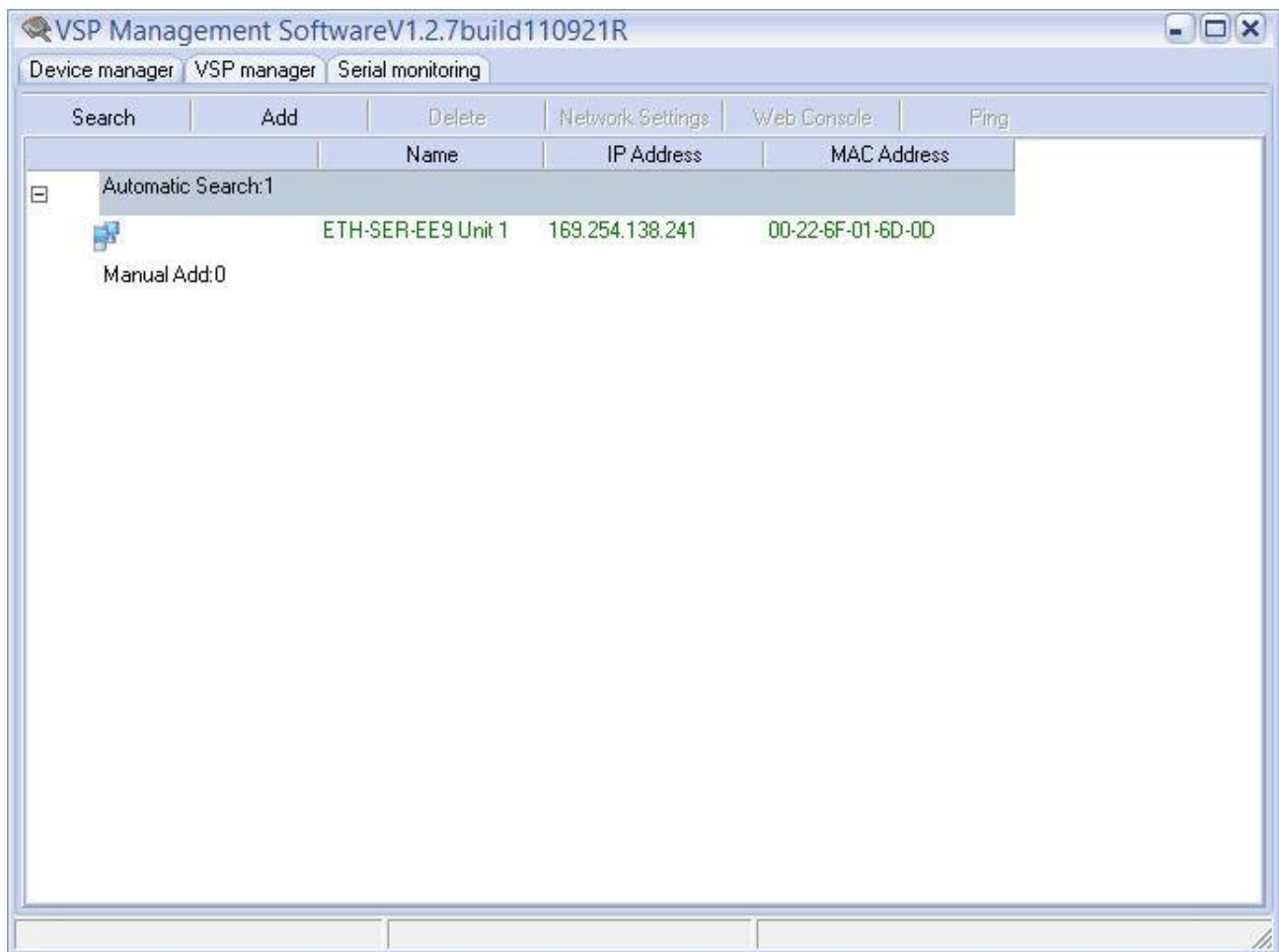


FIGURE 4.4 – SEARCH ETH-SER-EE9 DEVICE

- 6) Highlight the search results and select Network Settings. Now you must put in the correct IP information. Our IP will be 192.168.1.4 - 192.168.1 for the matched network and 4 for the unique ID. Enter the subnet mask. Our subnet mask is 255.255.255.0 (the three 255s masks the network id and 0 masks the unique ID). The Default Gateway is 192.168.1.1. Your information will be different. (SEE FIGURE 4.5)

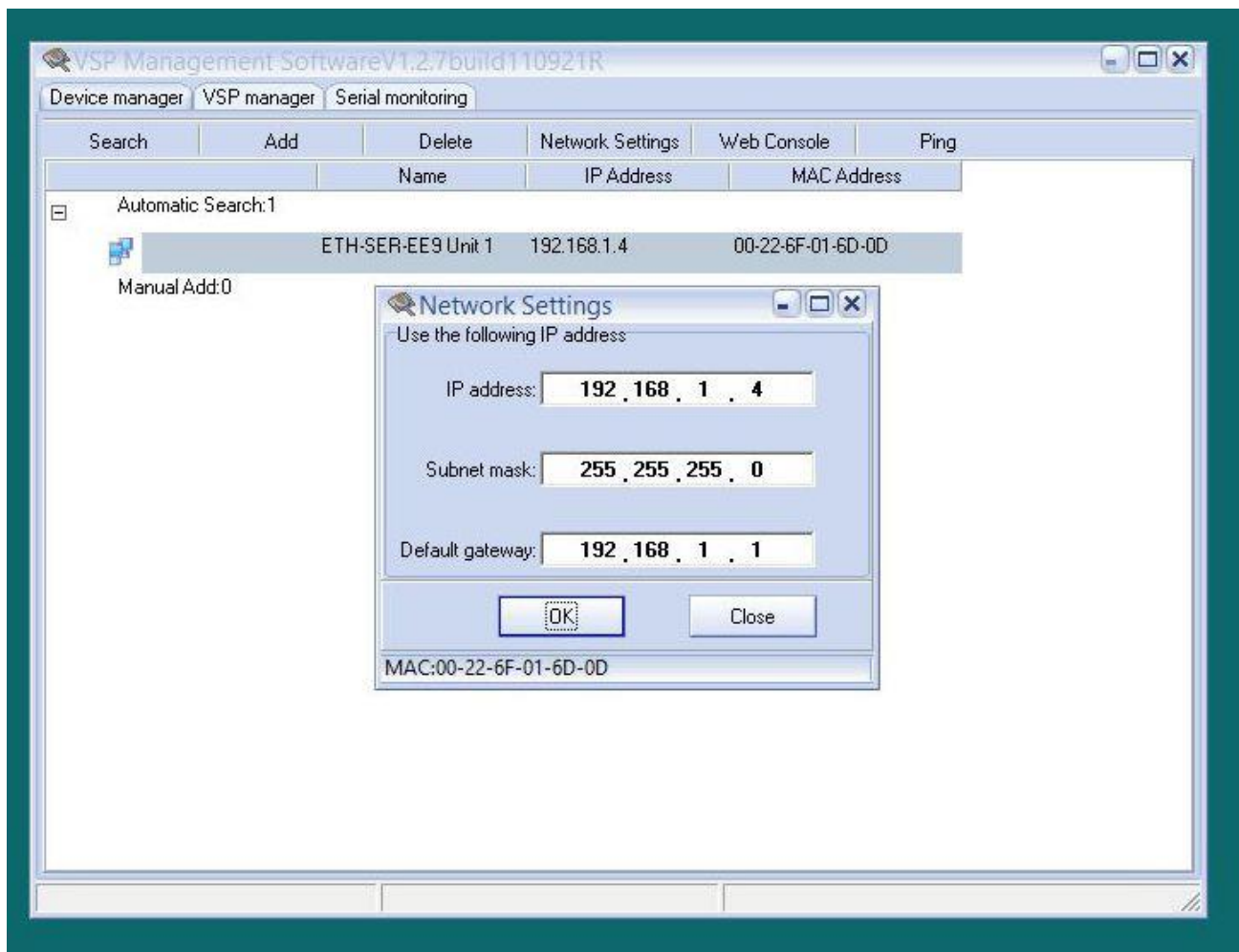


FIGURE 4.5 – ALTERING THE NETWORK SETTINGS

7) You can do a PING test to see if the DEVICE is responsive. (SEE FIGURE 4.6)

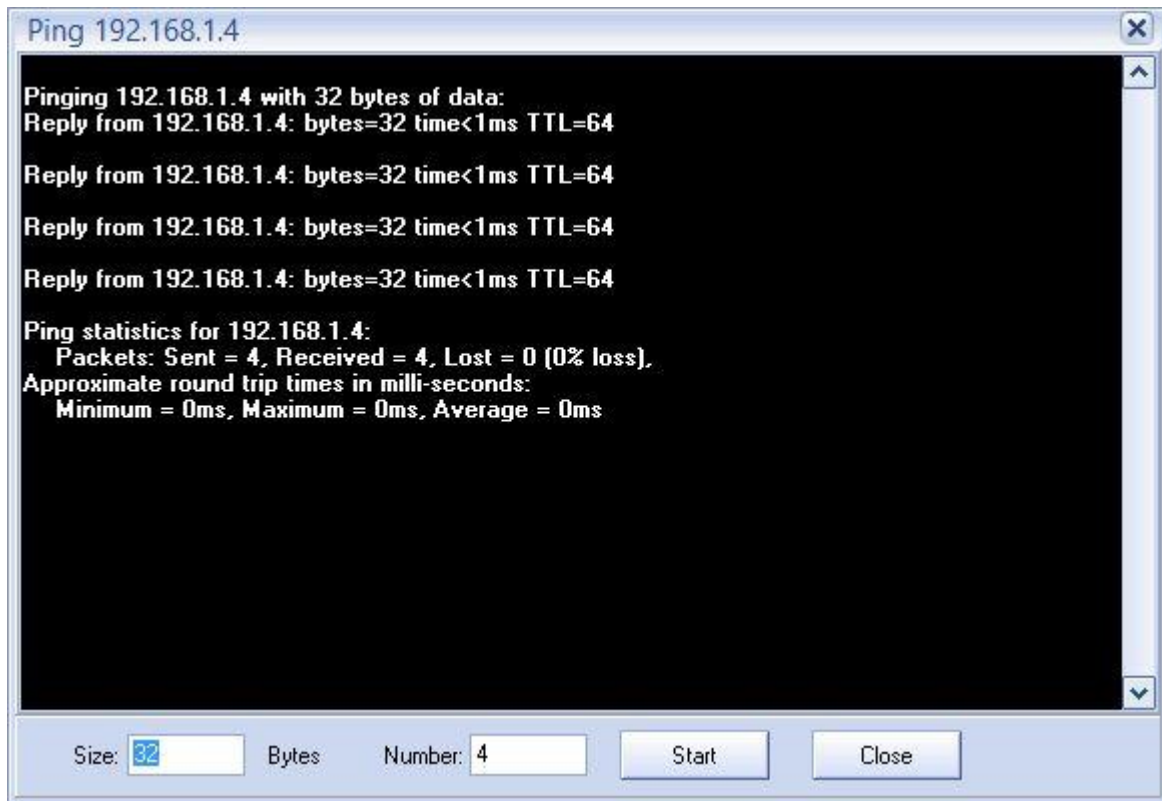


FIGURE 4.6 – PING TEST

- 8) Next for the ETHERNET PORT we will be setting up a Virtual COM Port. Choose VSP Manager and then New. Select an unused COM Port. We are using COM 2. Select an unused port number. We chose 30000. Press ADD and make sure the "RealCom" option is checked. (SEE FIGURE 4.7)

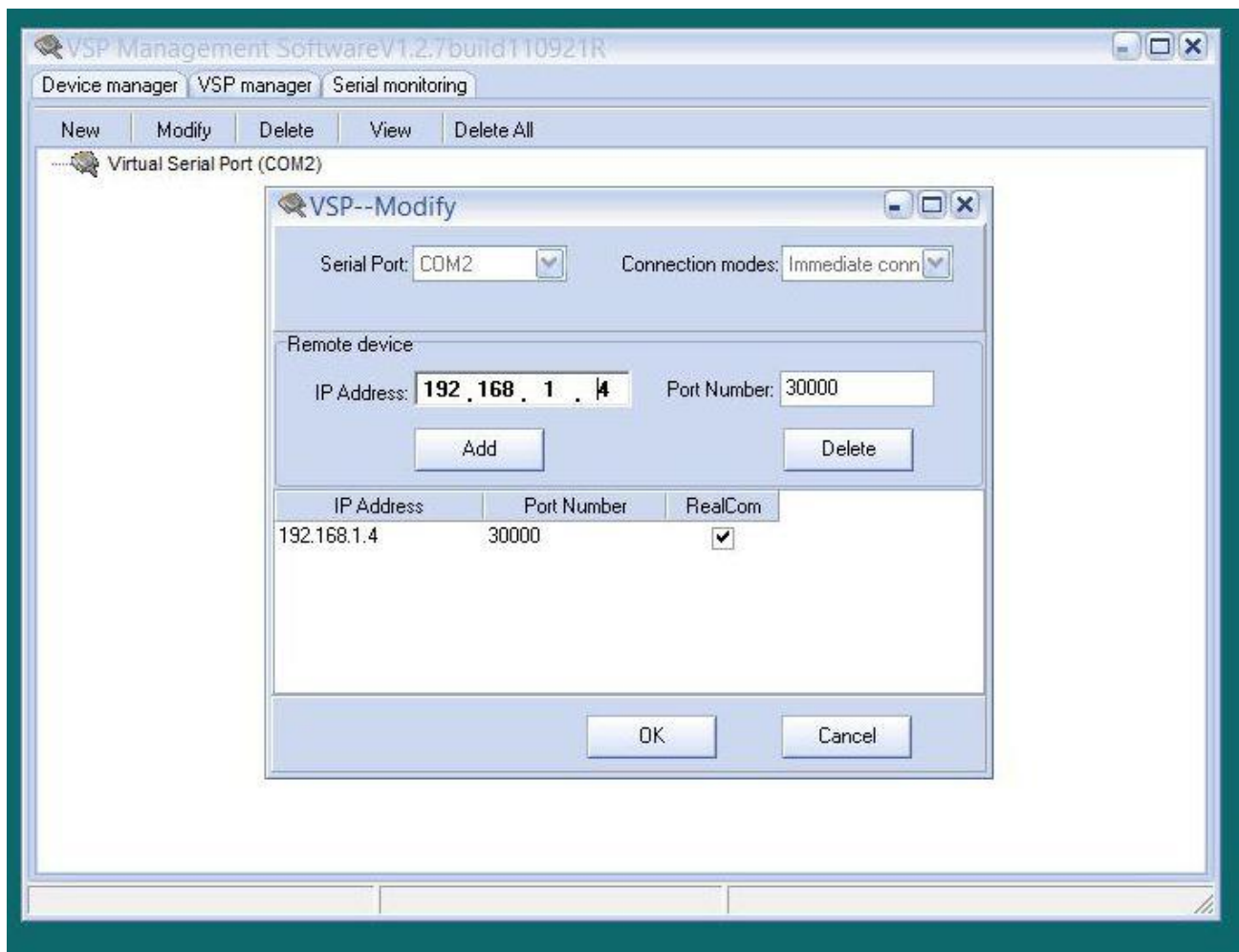
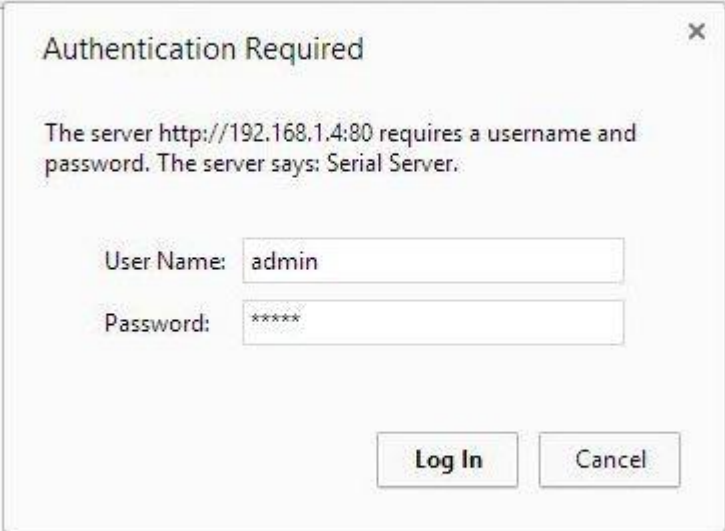


FIGURE 4.7 – VIRTUAL COM PORT SETTING

4.1.5 ETH-SER-EE9 SERIAL DEVICE SERVER BROWSER CONFIGURATION

- 3) Now enter the browser utility which is part of the VSP Management Software or your PC's browser and enter the IP of the device. An authorization screen will come up. The default user name is "admin" and the password is "admin". (SEE FIGURE 4.8).



Authentication Required

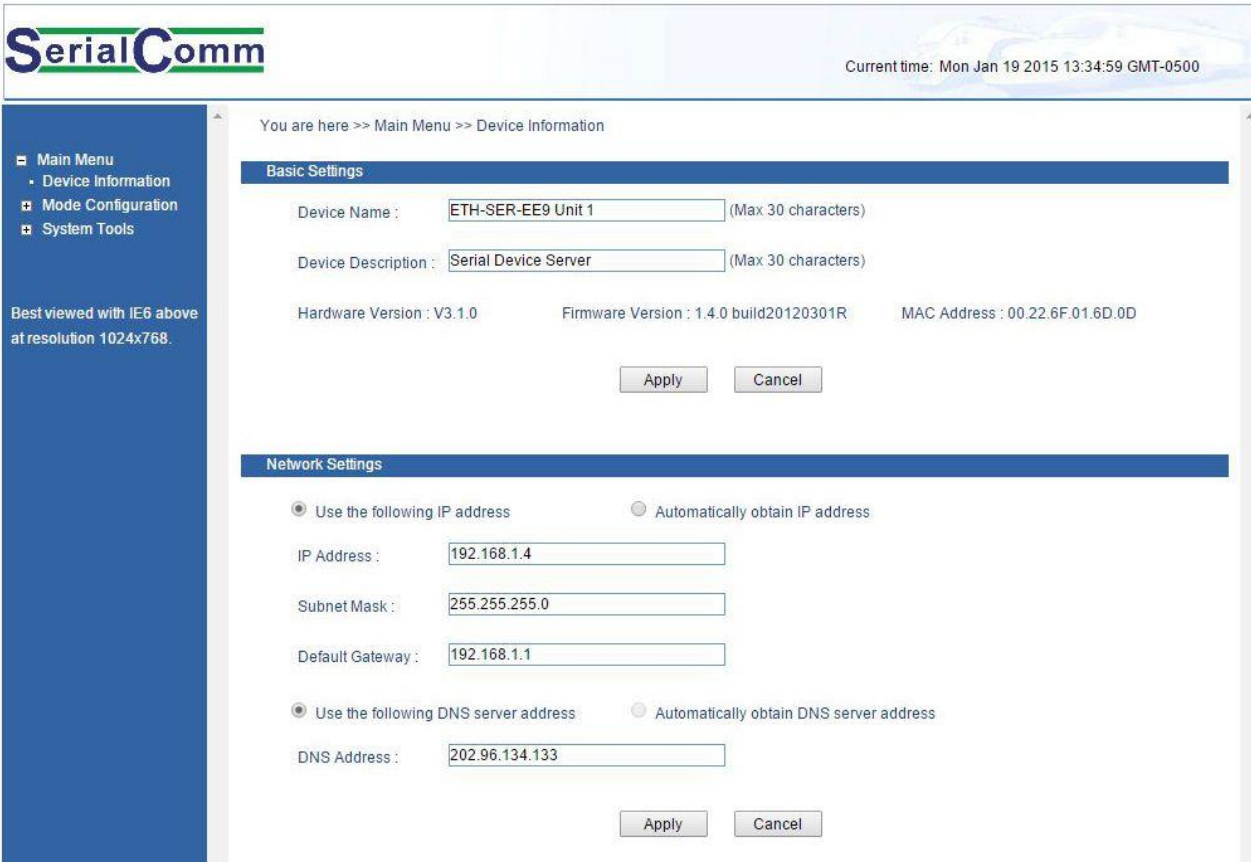
The server http://192.168.1.4:80 requires a username and password. The server says: Serial Server.

User Name:

Password:

FIGURE 4.8 – AUTHENTICATION SCREEN

- 4) The online configuration tool will come up. (SEE FIGURE 4.9)



SerialComm Current time: Mon Jan 19 2015 13:34:59 GMT-0500

You are here >> Main Menu >> Device Information

Main Menu

- Device Information
- Mode Configuration
- System Tools

Best viewed with IE6 above at resolution 1024x768.

Basic Settings

Device Name : (Max 30 characters)

Device Description : (Max 30 characters)

Hardware Version : V3.1.0 Firmware Version : 1.4.0 build20120301R MAC Address : 00.22.6F.01.6D.0D

Network Settings

☒ Use the following IP address ☐ Automatically obtain IP address

IP Address :

Subnet Mask :

Default Gateway :

☒ Use the following DNS server address ☐ Automatically obtain DNS server address

DNS Address :

FIGURE 4.9 – BROWSER CONFIGURATION TOOL

- 5) Under the Serial Settings (The serial settings are necessary if you are using a virtual COM port for the Ethernet Port).

These should be default values.

- a. We are select RS-232 as our protocol.
- b. 115,200 as our baud rates.
- c. Parity is none.
- d. Data Bits are 8.
- e. Stop Bites is 1.
- f. Max Data Packet is 500.
- g. Character Delay 5.
- h. Overtime times: 201.

- 6) The Work Mode Settings are set as a TCP Server.

- a. Set as TCP Server.
- b. Port number is the port selected in VSP Virtual COM port manager. We are using 30000.
- c. The rest of the values are not used in TCP Server mode.
(SEE FIGURE 4.10).

The screenshot displays the SerialComm web interface. The top header shows the 'SerialComm' logo and the current time: 'Mon Jan 19 2015 13:36:10 GMT-0500'. A breadcrumb trail indicates the current location: 'You are here >> Main Menu >> Mode Configuration >> Serial Settings'.

Serial Settings

Serial Work Mode: RS-232 (dropdown) Baud Rate(bps): 115200 (dropdown) Parity Bits: None (dropdown)

Data Bits(bits): 8 (dropdown) Stop Bits(bits): 1 (dropdown) Max Data Packets: 500 (input) (1~1024)bytes

Character Delay: 5 (input) (1~500)ms Overtime Times: 201 (input) (0~60000)ms

Work Mode Settings

Sessions	Work Mode	Local Port (1~65535)	Destination Address	Destination Port (1~65535)	Connection Mode	Keep-alive (0~65535)s	RealCom
<input checked="" type="checkbox"/>	TCP Serve (dropdown)	30000 (input)	IP (dropdown) 169.254.138.242 (input)	30001 (input)	Connect Now (dropdown)	300 (input)	Oper (dropdown)
<input type="checkbox"/>	TCP Serve (dropdown)	30001 (input)	IP (dropdown) 192.168.2.3 (input)	31001 (input)	Connect Now (dropdown)	300 (input)	Clos (dropdown)
<input type="checkbox"/>	TCP Serve (dropdown)	30002 (input)	IP (dropdown) 192.168.2.3 (input)	31002 (input)	Connect Now (dropdown)	300 (input)	Clos (dropdown)
<input type="checkbox"/>	TCP Serve (dropdown)	30003 (input)	IP (dropdown) 192.168.2.3 (input)	31003 (input)	Connect Now (dropdown)	300 (input)	Clos (dropdown)

Buttons: Apply, Cancel

FIGURE 4.10 – SERIAL AND WORK MODE SETTINGS

- 7) Exit the browser configuration.

4.1.6 ETH-SER-EE9 LOOPBACK TEST

- 1) We are now connecting the USB-232-2 - USB to RS232 adapter to a null modem adapter and then to the ETH-SER-EE9 serial DB9 port. We are using a USB to RS-232 adapter because the computer we are using does not have a serial port. Make sure the Ethernet is attached and the Network portion of the IP still matches. We will need to open two instances of AccessPort since the looped back data was transmitted and received by two different ports; one for the USB adapter and the other for the Ethernet virtual COM port.
 - a. Connect the USB-232-2 adapter to the USB port of the PC or laptop.
 - b. You will hear a beep sound. This means that the adapter driver was installed.
 - c. Make sure the Ethernet is connected between converters.
 - d. A virtual COM port is automatically created.
 - e. The virtual COM port the Ethernet was setup during the VSP virtual port setup.
- 2) Determine which COM ports you are using. The ports list of the device manager of control panel will show you the used COM ports. (SEE FIGURE 4.11)

CONTROL PANEL→HARDWARE AND SOUND→DEVICE MANAGER→PORTS (COM & LPT)

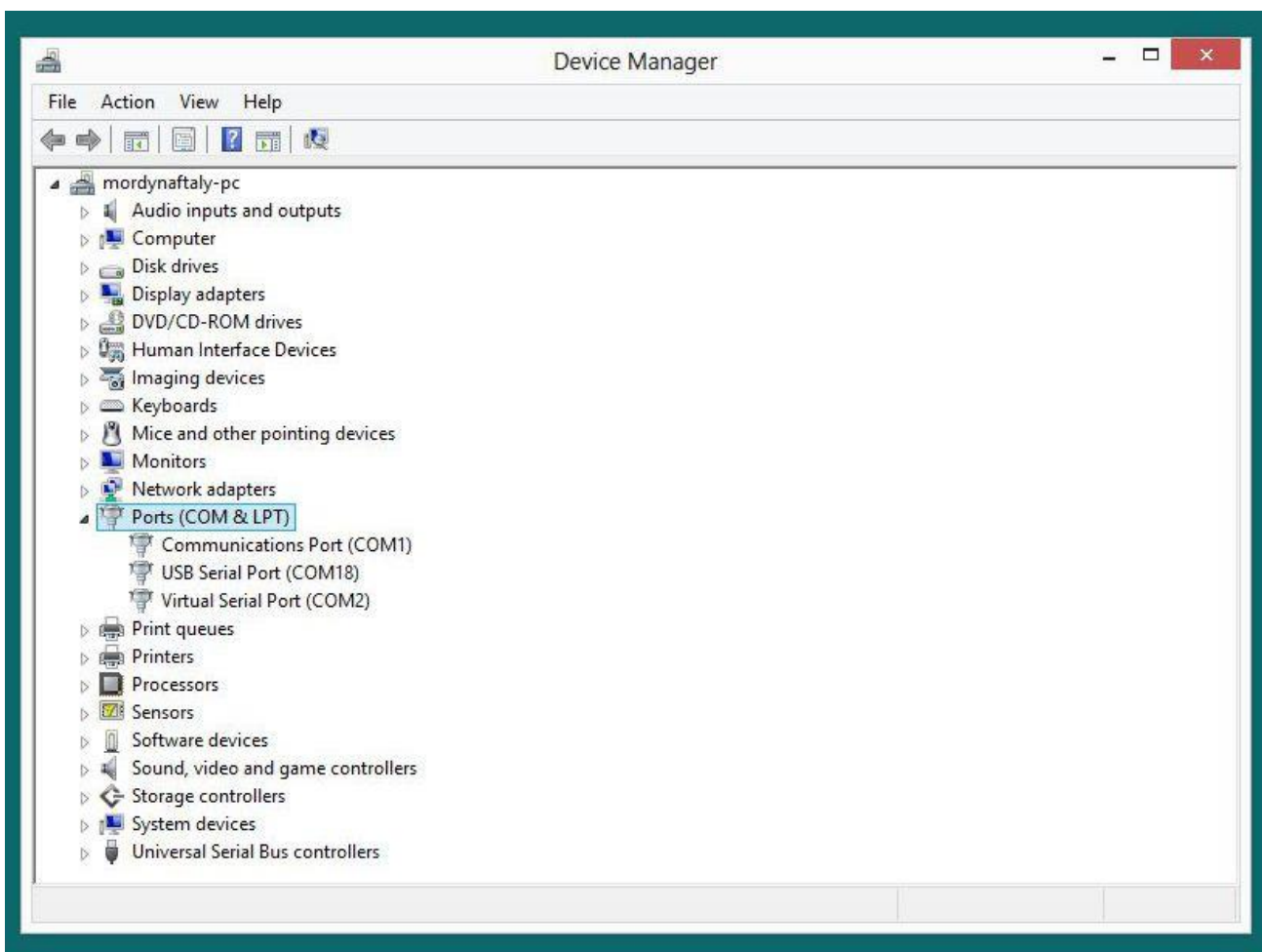


FIGURE 4.11 – CONTROL PANEL – PORTS ASSIGNMENTS

- 3) In AccessPort select the yellow and green gear for each instance. Choose the COM ports and serial settings. Select “Enable Auto Send” and select OK. (SEE FIGURE 4.12)

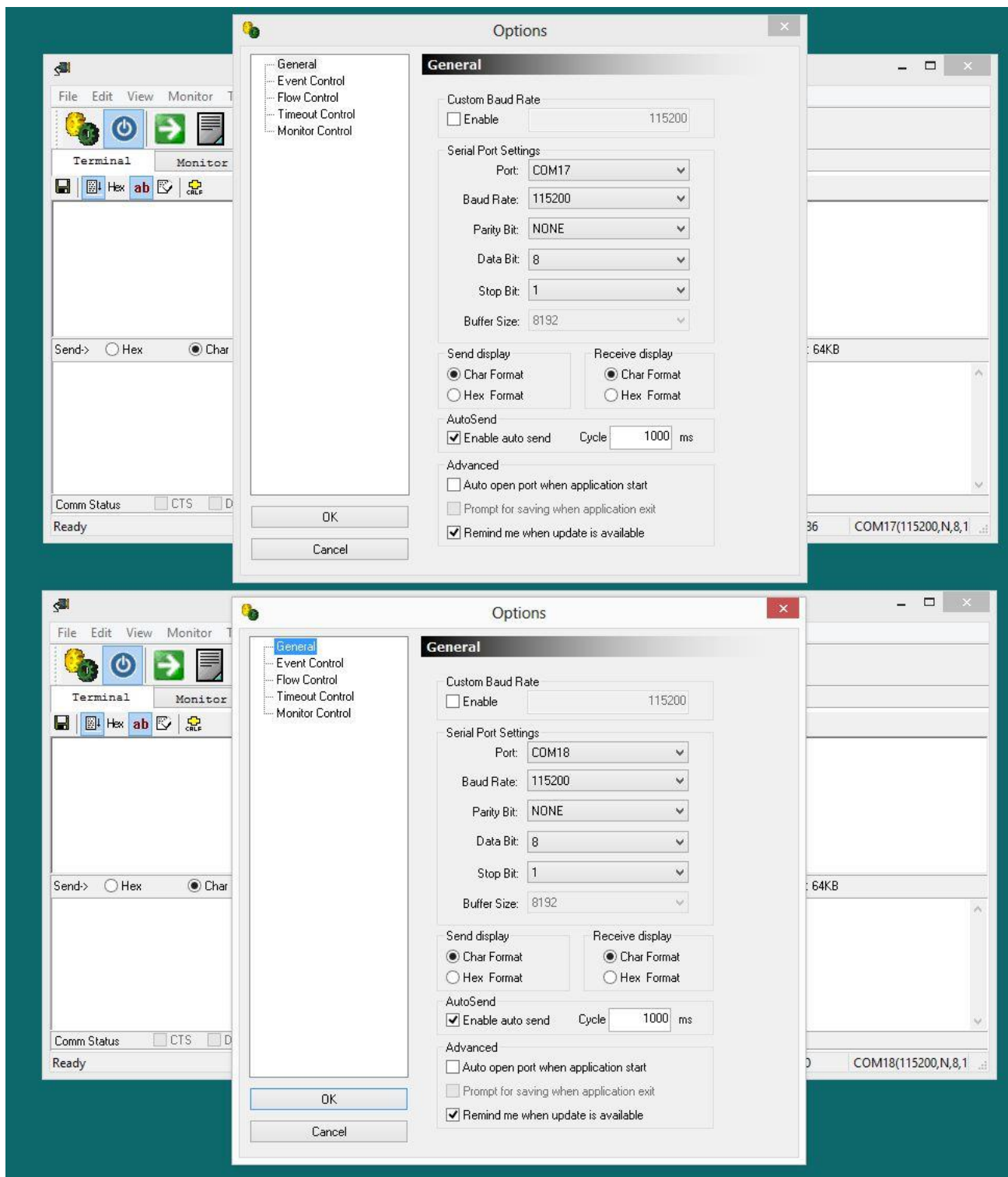


FIGURE 4.12 – ACCESSPORT SERIAL CONFIGURATION

- 4) In the output message box you can enter “1 2 3 4” and the other output message box you can enter “5 6 7 8 9”.
- 5) In the input message boxes you should see the strings being received repeatedly. (SEE FIGURE 4.13).

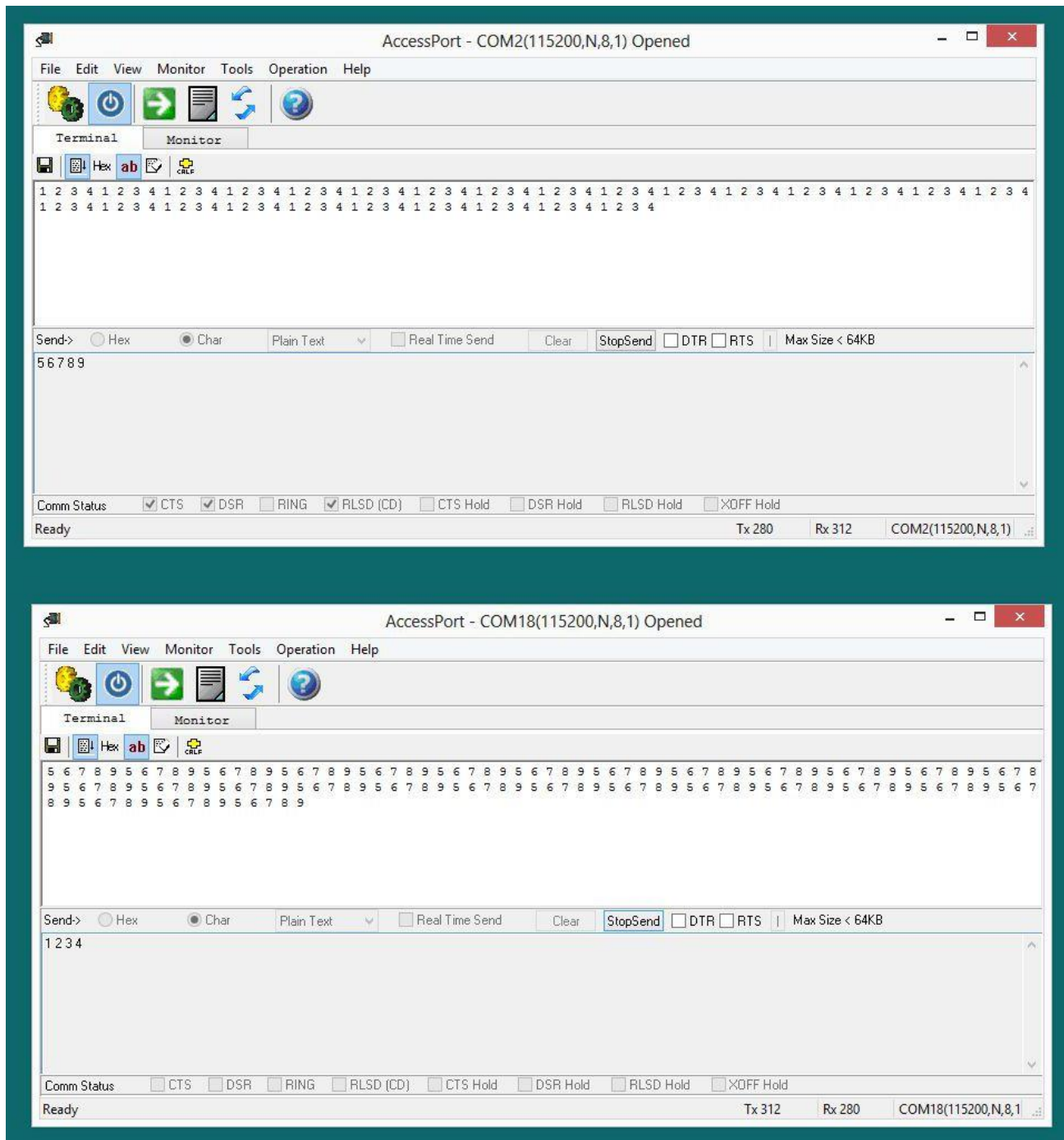


FIGURE 4.13 – ACCESSPORT LOOPBACK TEST RESULTS

4.2 APPLICATION 2 – SERIAL-TO-SERIAL VIA ETHERNET MODE

4.2.1 APPLICATION 1 OVERVIEW

Serial-to-serial via Ethernet - POINT-TO-POINT is a very common application of the ETH-SER-EE9. When choosing this mode the serial (RS-232, RS-485, RS-422) will be connected to serial devices or PCs/laptops of both converters. The Ethernet ports of the converters will be attached to each other through an Ethernet network. The serial ports on both ends can be the same protocols or different ones. For example RS-232 can be used on one port and RS-422 or the other or RS-485 on one port and RS-422 on the other. Any combination will work. (SEE FIGURE 4.14).

In this example, we will be connecting the two RS-232 ports of the ETH-SER-EE9 converters to the same PC and connecting the ETHERNET PORT directly from one converter to the other. Both RS232 ports will be connected to the DB9 connector of the converter with a null modem crossover cable or adapter since the converter is a DTE (server). We will be using two USB to RS232 adapters (USB-232-2) because the computer we are using does not have a serial port. We will need to open two instances of AccessPort since will be monitoring two serial ports. However, before setting up this configuration we must first configure the converter with the VSP Management Software.

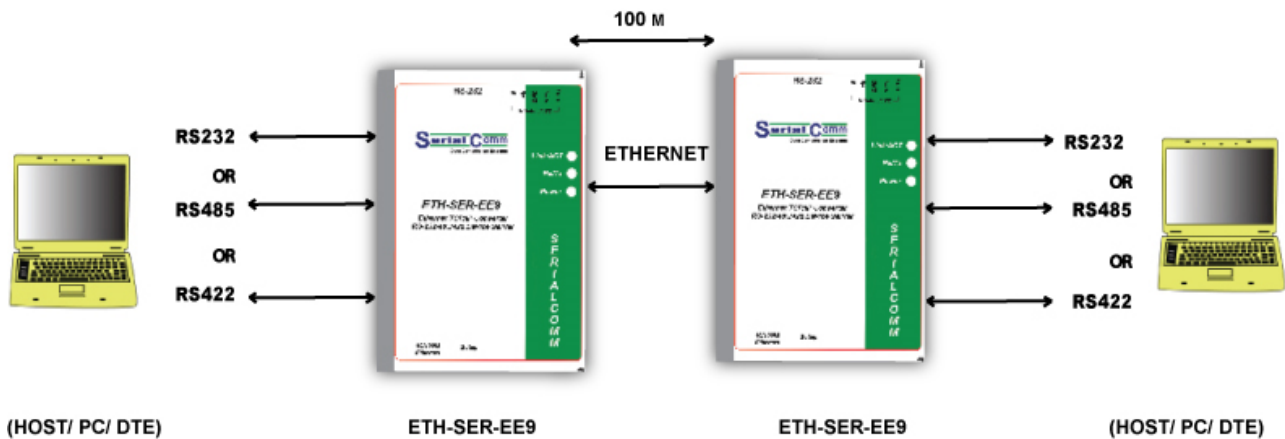


FIGURE 4.14 – SERIAL POINT-TO-POINT CONFIGURATION VIA ETHERNET

4.2.2 INSTALLATION OF THE VSP MANAGEMENT CONFIGURATION SOFTWARE

The VSP Management Software must be first installed on the host Windows based PC or laptop that will connect to the ETH-SER-EE9 via an Ethernet network. See Section 2 and 3 of the VSP Management V1.2.7 User Manual included in the software CD supplied with the ETH-SER-EE9.

4.2.3 INSTALLATION OF THE ETH-SER-EE9 SERIAL DEVICE SERVER (UNIT 1)

Now that the VSP Management Software is installed, in order for it to function properly it needs to communicate with the ETH-SER-EE9. The ETH-SER-EE9 now needs to be connected to the host with the VSP software installed.

- 1) The ETH-SER-EE9's default IP address is 192.168.1.X subnet 255.255.255.0 for the network segment. The default user name is admin and the default password is admin. These default settings will be changed later after installation.
- 2) Unpack the ETH-SER-EE9. It includes the unit, a power supply, and an Ethernet cable.
- 3) Connect the power supply to the converter. Wire V+ of the power supply goes to terminal post V+ of the converter and wire V- of the power supply goes to terminal post V- of the converter.
- 4) Power the ETH-SER-EE9. The power green LED should be lit.
- 5) Connect the Ethernet cable to the ETH-SER-EE9; either directly to the PC, laptop, or to the connecting network. Once the Ethernet cable is attached, the green Link/ACT LED should be lit.

4.2.4 ETH-SER-EE9 SERIAL DEVICE SERVER (UNIT 1) CONFIGURATION USING THE VSP MANAGEMENT SOFTWARE

The ETH-SER-EE9 default IP address is 192.168.1.254 subnet mask 255.255.255.0. When the ETH-SER-EE9 is accessed through the web browser, the Local Area Network portion of the IP address must be the same. The device IP must be unused portion of the IP network portion making the device IP address unique. There are two methods to do this; one is to change the IP of the PC/laptop to match that of the ETH-SER-EE9 (not possible in WIN 7 and WIN 8) or change the IP of the ETH-SER-EE9 to match that of the PC/laptop/connecting network. In this example we will be changing the IP address of the ETH-SER-EE9.

- 1) The first step is to find out what is the IP of the PC/laptop/connecting network. This can be done from the PC/laptop WIN control panel.

Control Panel → Network and Internet → Network and Sharing Center → Connect of Ethernet Connections → Details

- 2) You will see the Ethernet IP and subnet mask. Our IP address is 192.168.1.3. Our subnet mask is 255.255.255.0 and Default Gateway is 192.168.1.1. Your information will be different. (SEE FIGURE 4.15).

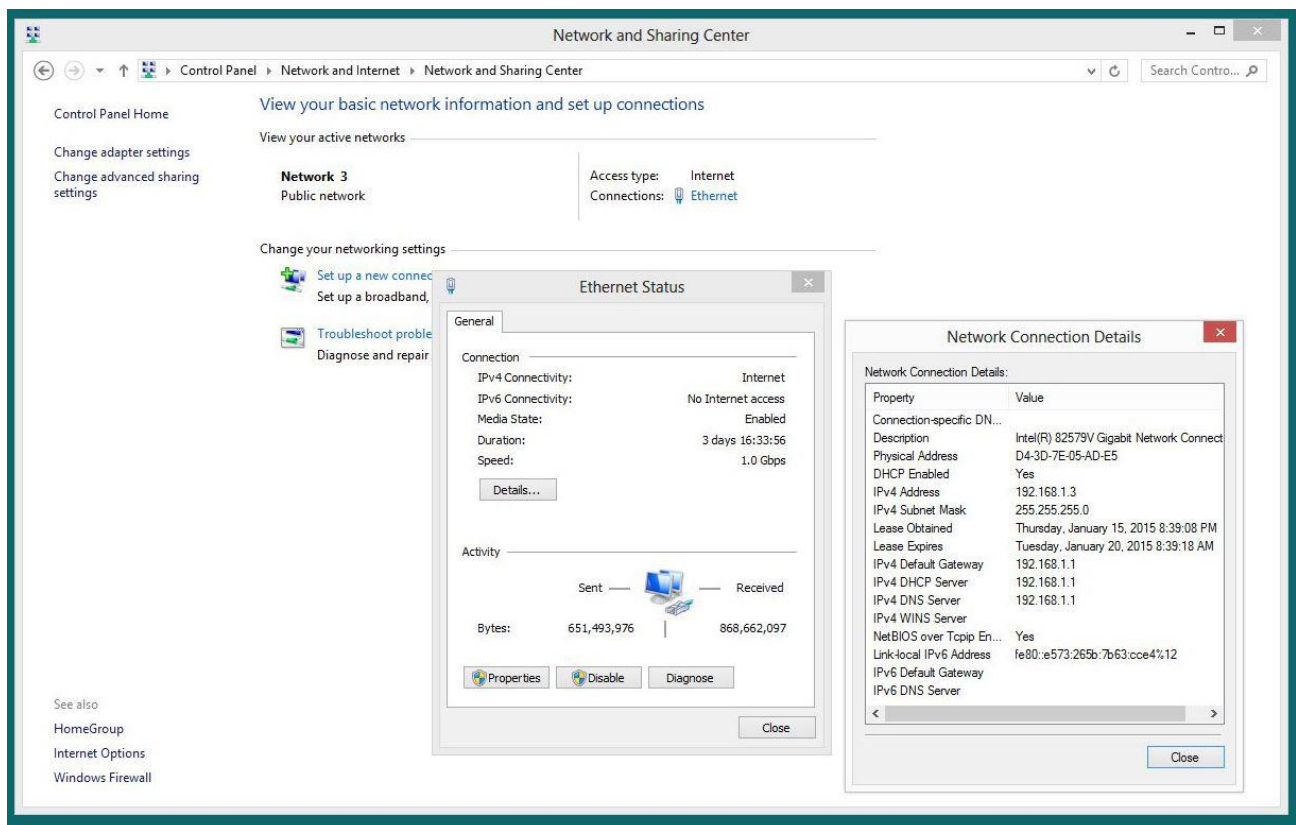


FIGURE 4.15 – PC/LAPTOP LAN INFORMATION

- 3) Make sure the ETH-SER-EE9 is connected to power and the Ethernet cable is connected to the PC directly or indirectly.
- 4) Run the VSP management software. (SEE FIGURE 4.16).

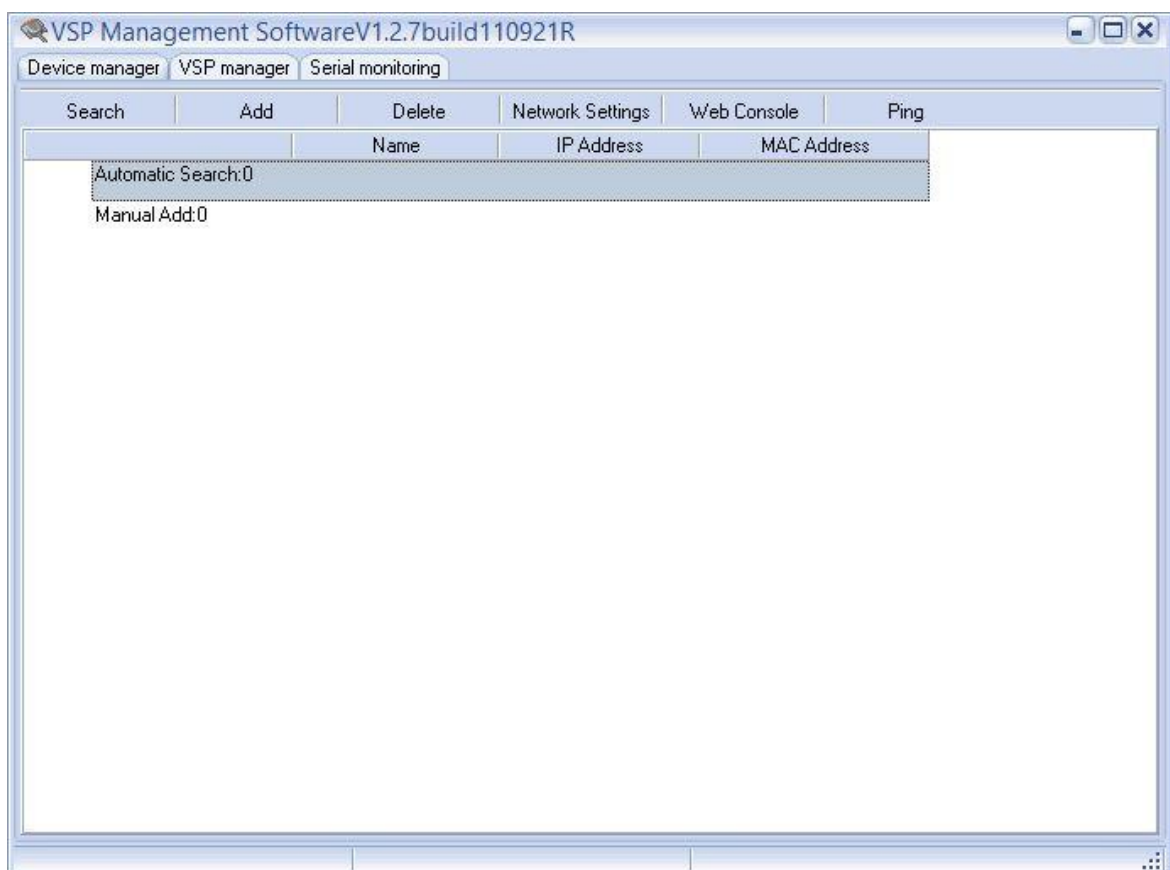


FIGURE 4.16 – VSP MANAGEMENT SOFTWARE

- 5) Search for the attached ETH-SER-EE9 device. Our name is ETH-SER-EE9 Unit 1, IP 169.254.138.241 MAC 00-22-6F-01-6D-0D. (SEE FIGURE 4.17).

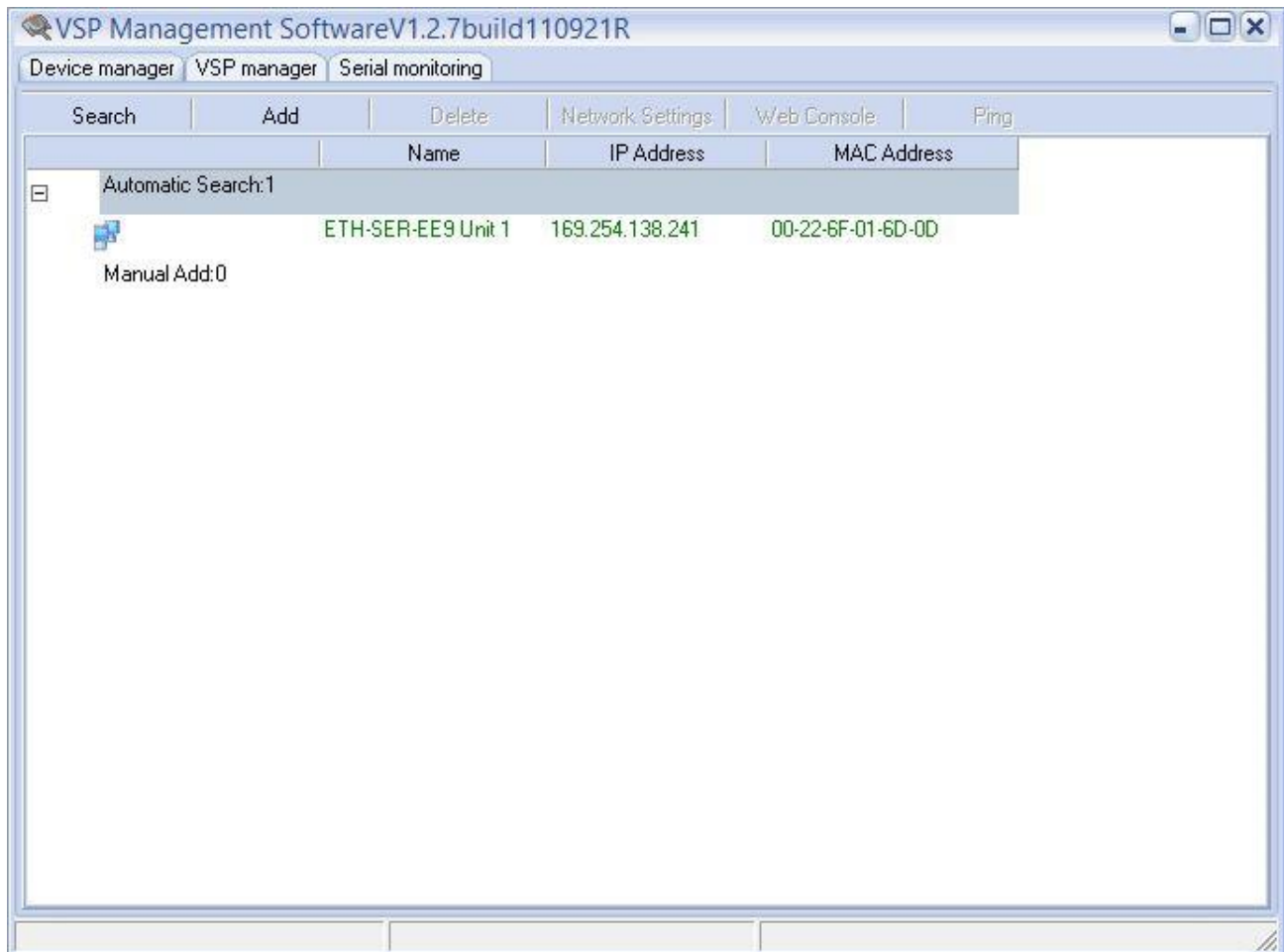


FIGURE 4.17 – SEARCH ETH-SER-EE9 DEVICE

- 6) Highlight the search results and select Network Settings. Now you must put in the correct IP information. Our IP will be 192.168.1.4 - 192.168.1 for the matched network and 4 for the unique ID. Enter the subnet mask. Our subnet mask is 255.255.255.0 (the three 255s masks the network id and 0 masks the unique ID). The Default Gateway is 192.168.1.1. Your information will be different. (SEE FIGURE 4.18).

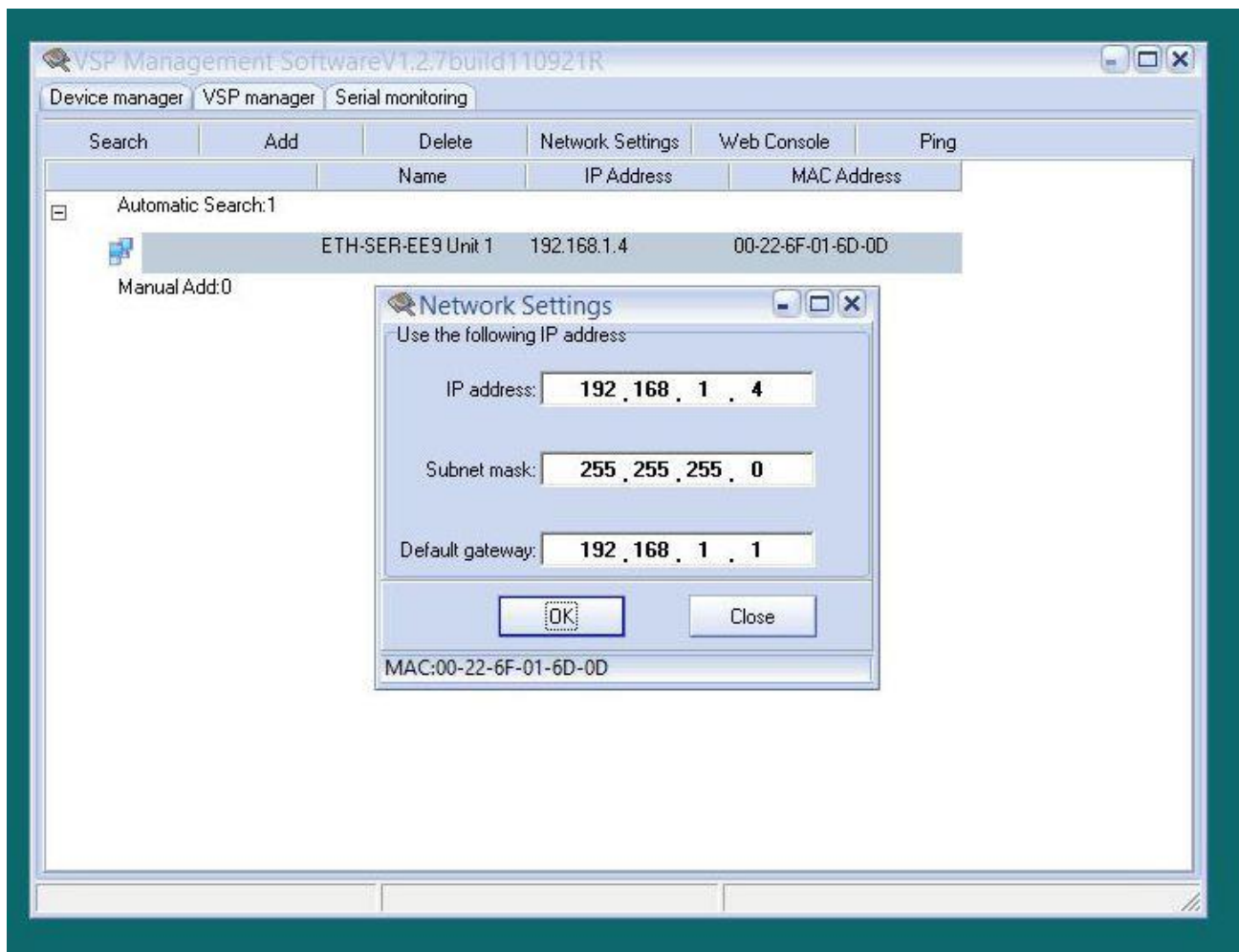


FIGURE 4.18 – ALTERING THE NETWORK SETTINGS

7) You can do a PING test to see if the DEVICE is responsive. (SEE FIGURE 4.19).

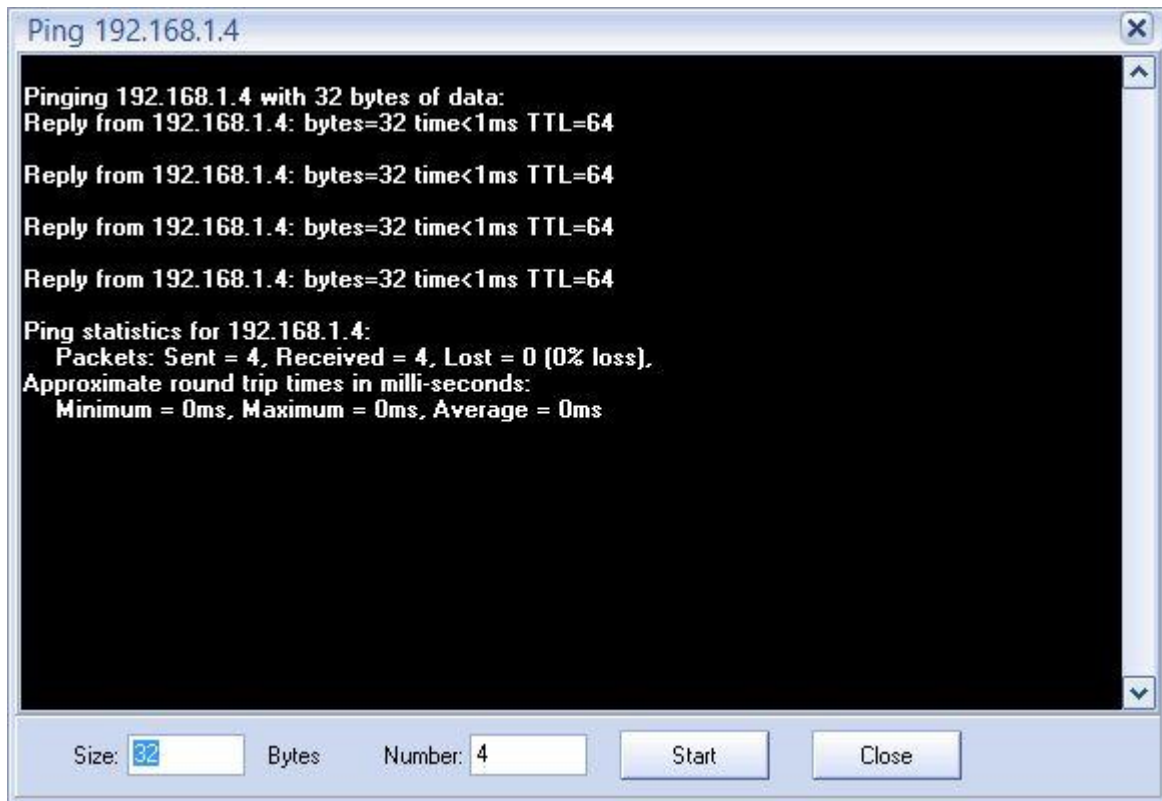
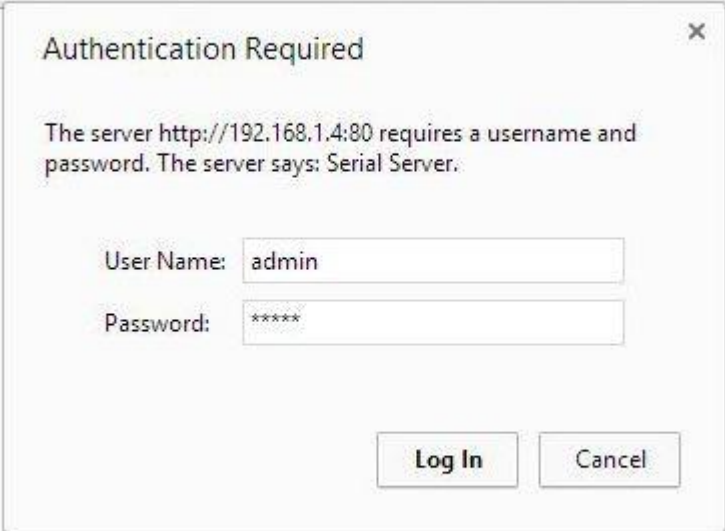


FIGURE 4.19 – PING TEST

4.2.5 ETH-SER-EE9 SERIAL DEVICE SERVER (UNIT 1) BROWSER CONFIGURATION

- 1) Now enter the browser utility which is part of the VSP Management Software or your PC's browser and enter the IP of the device. An authorization screen will come up. The default user name is "admin" and password is "admin". (SEE FIGURE 4.20).



Authentication Required

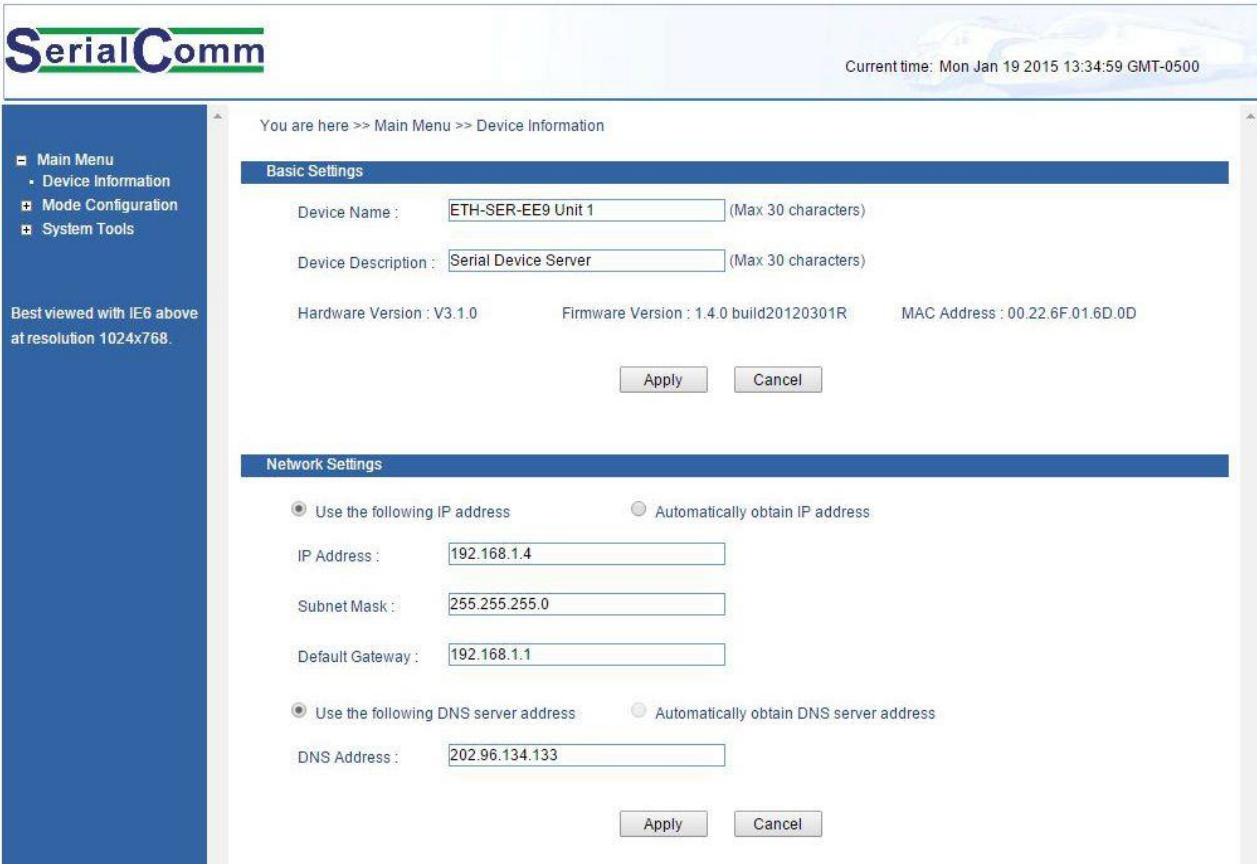
The server http://192.168.1.4:80 requires a username and password. The server says: Serial Server.

User Name:

Password:

FIGURE 4.20 – AUTHENTICATION SCREEN

2) The online configuration tool will come up. (SEE FIGURE 4.21).



SerialComm Current time: Mon Jan 19 2015 13:34:59 GMT-0500

You are here >> Main Menu >> Device Information

Main Menu

- Device Information
- Mode Configuration
- System Tools

Best viewed with IE6 above at resolution 1024x768.

Basic Settings

Device Name : (Max 30 characters)

Device Description : (Max 30 characters)

Hardware Version : V3.1.0 Firmware Version : 1.4.0 build20120301R MAC Address : 00.22.6F.01.6D.0D

Network Settings

☒ Use the following IP address ☐ Automatically obtain IP address

IP Address :

Subnet Mask :

Default Gateway :

☒ Use the following DNS server address ☐ Automatically obtain DNS server address

DNS Address :

FIGURE 4.21 – BROWSER CONFIGURATION TOOL

- 3) Under the Serial Settings we will not be changing any values (the serial settings are necessary if you are not using a virtual COM port for the Ethernet Port).
- 4) The Work Mode Settings are set as a TCP Server.
 - a. Set as TCP Server (one converter must be a Server and the other a Client).
 - b. Port number is an unused port. We are using 30000.
 - c. RealCom must be closed (we are not using a virtual port).
 - d. The rest of the values are not used in TCP Server mode. (SEE FIGURE 4.22).

The screenshot shows the SerialComm web interface. The top header includes the 'SerialComm' logo and the current time: 'Sun Feb 01 2015 17:17:44 GMT-0500'. A breadcrumb trail indicates the current location: 'You are here >> Main Menu >> Mode Configuration >> Serial Settings'.

Serial Settings

Serial Work Mode: RS-232 | Baud Rate(bps): 115200 | Parity Bits: None

Data Bits(bits): 8 | Stop Bits(bits): 1 | Max Data Packets: 500 (1~1024)bytes

Character Delay: 5 (1~500)ms | Overtime Times: 201 (0~60000)ms

Work Mode Settings

Sessions	Work Mode	Local Port (1~65535)	Destination Address	Destination Port (1~65535)	Connection Mode	Keep-alive (0~65535)s	RealCom
<input checked="" type="checkbox"/>	TCP Serve	30000	IP 169.254.138.242	30001	Connect Now	300	Close
<input type="checkbox"/>	TCP Serve	30001	IP 192.168.2.3	31001	Connect Now	300	Close
<input type="checkbox"/>	TCP Serve	30002	IP 192.168.2.3	31002	Connect Now	300	Close
<input type="checkbox"/>	TCP Serve	30003	IP 192.168.2.3	31003	Connect Now	300	Close

Buttons: Apply, Cancel

FIGURE 4.22 – SERIAL AND WORK MODE SETTINGS

- 5) Exit the browser configuration.

4.2.6 INSTALLATION OF THE ETH-SER-EE9 SERIAL DEVICE SERVER (UNIT 2)

The ETH-SER-EE9 Unit 2 now needs to be connected to the host with the VSP software installed.

- 1) The ETH-SER-EE9's default IP address is 192.168.1.X subnet 255.255.255.0 for the network segment. The default user name is admin and the default password is admin. These default settings will be changed later after installation.
- 2) Unpack the ETH-SER-EE9. It includes the unit, a power supply, and an Ethernet cable.

- 3) Connect the power supply to the converter. Wire V+ of the power supply goes to terminal post V+ of the converter and wire V- of the power supply goes to terminal post V- of the converter.
- 4) Power the ETH-SER-EE9. The power green LED should be lit.
- 5) Connect the Ethernet cable to the ETH-SER-EE9; either directly to the PC, laptop, or to the connecting network. Once the Ethernet cable is attached, the green Link/ACT LED should be lit.

4.2.7 ETH-SER-EE9 SERIAL DEVICE SERVER (UNIT 2) CONFIGURATION USING THE VSP MANAGEMENT SOFTWARE

The ETH-SER-EE9 default IP address is 192.168.1.254 subnet mask 255.255.255.0. When the ETH-SER-EE9 is accessed through the web browser, the Local Area Network portion of the IP address must be the same. The device IP must be unused portion of the IP network portion making the device IP address unique. There are two methods to do this; one is to change the IP of the PC/laptop to match that of the ETH-SER-EE9 (not possible in WIN 7 and WIN 8) or change the IP of the ETH-SER-EE9 to match that of the PC/laptop/connecting network. In this example we will be changing the IP address of the ETH-SER-EE9.

- 1) We know the Ethernet IP of our PC is 192.168.1.3. Our subnet mask is 255.255.255.0 and Default Gateway is 192.168.1.1. We chose IP 192.168.1.4 for unit 1. We will choose IP 192.168.1.5 for unit 2.
- 2) Make sure the ETH-SER-EE9 (Unit 2) is connected to power and the Ethernet cable is connected to the PC directly or indirectly.
- 3) Run the VSP management software. (SEE FIGURE 4.23).

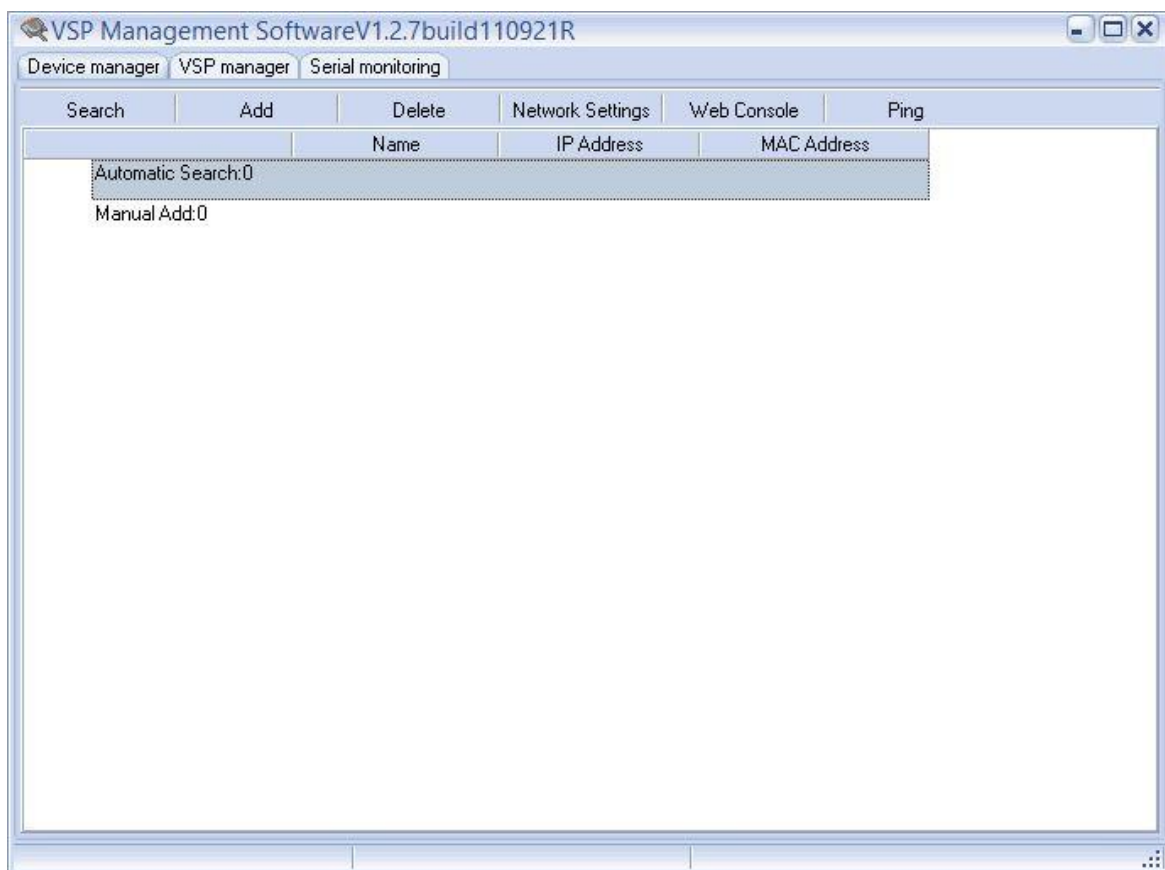


FIGURE 4.23 – VSP MANAGEMENT SOFTWARE

- 4) Search for the attached ETH-SER-EE9 device. Our name is ETH-SER-EE9 Unit 2, IP 192.168.1.99 MAC 00-22-6F-01-6D-0C. (SEE FIGURE 4.24).

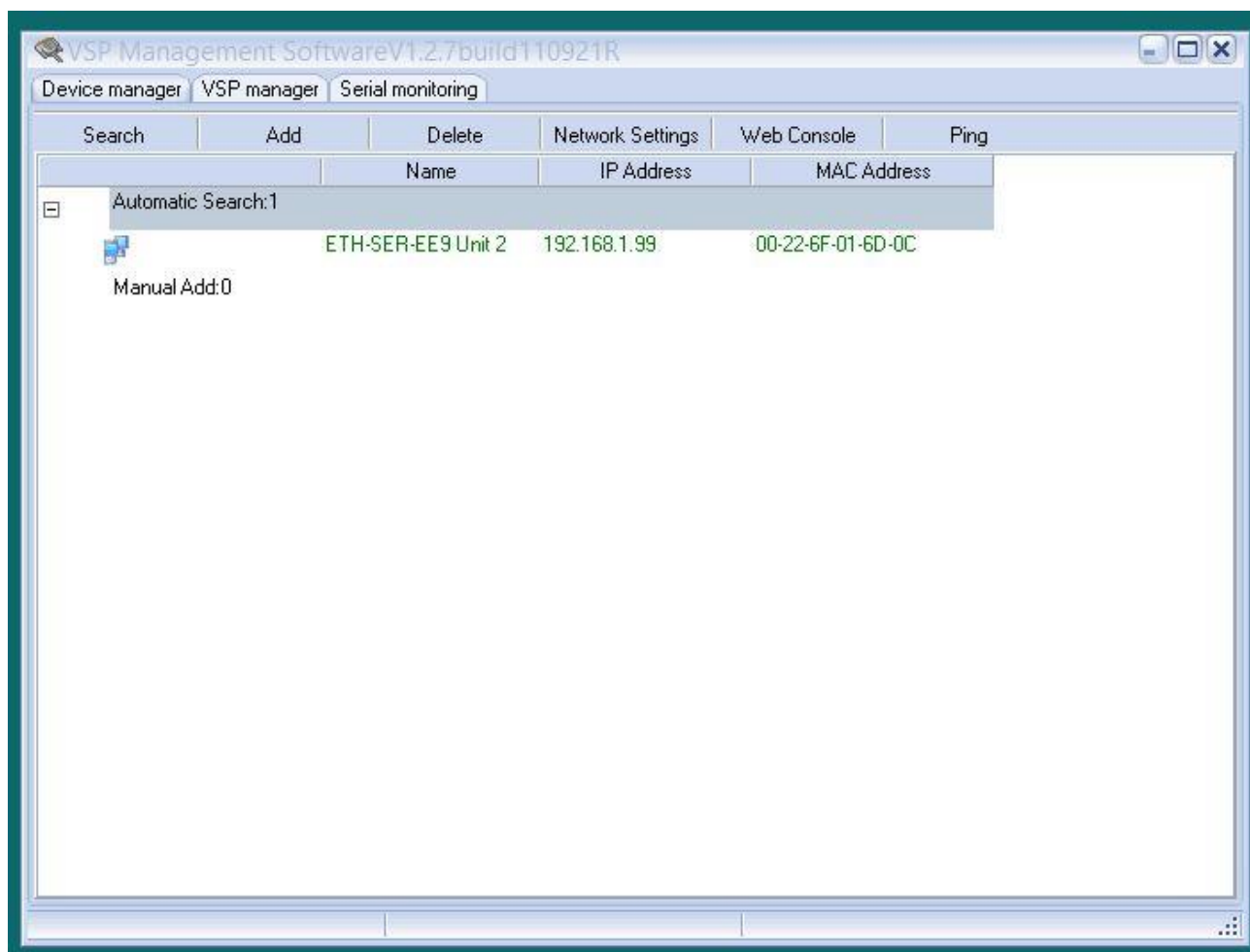


FIGURE 4.24 – SEARCH ETH-SER-EE9 DEVICE

- 5) Highlight the search results and select Network Settings. Now you must put in the correct IP information. Our IP will be 192.168.1.5 - 192.168.1 for the matched network and 5 for the unique ID. Enter the subnet mask. Our subnet mask is 255.255.255.0 (the three 255s masks the network id and 0 masks the unique ID). The Default Gateway is 192.168.1.1. Your information will be different. (SEE FIGURE 4.25).

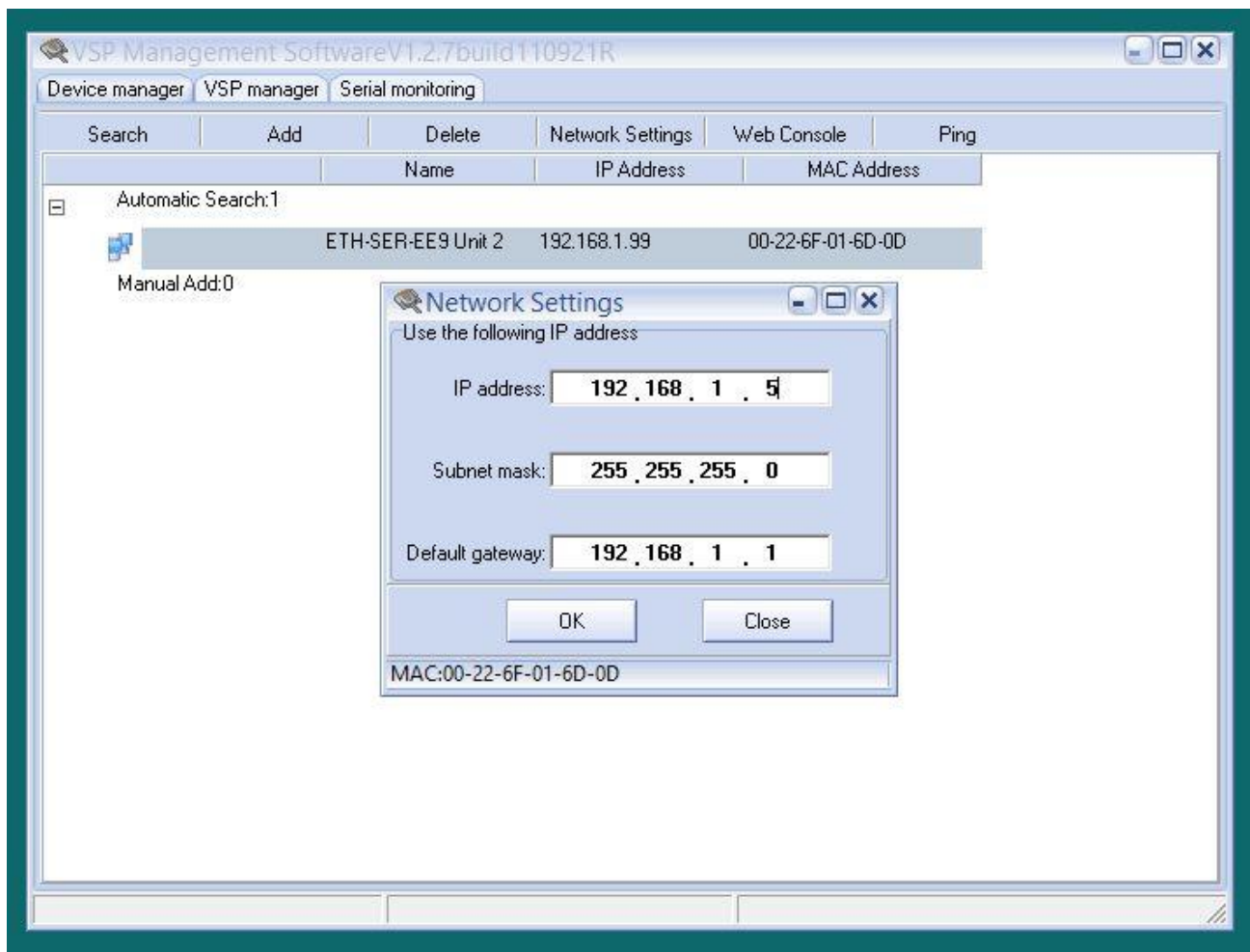


FIGURE 4.25 – ALTERING THE NETWORK SETTINGS

6) You can do a PING test to see if the DEVICE is responsive. (SEE FIGURE 4.26).

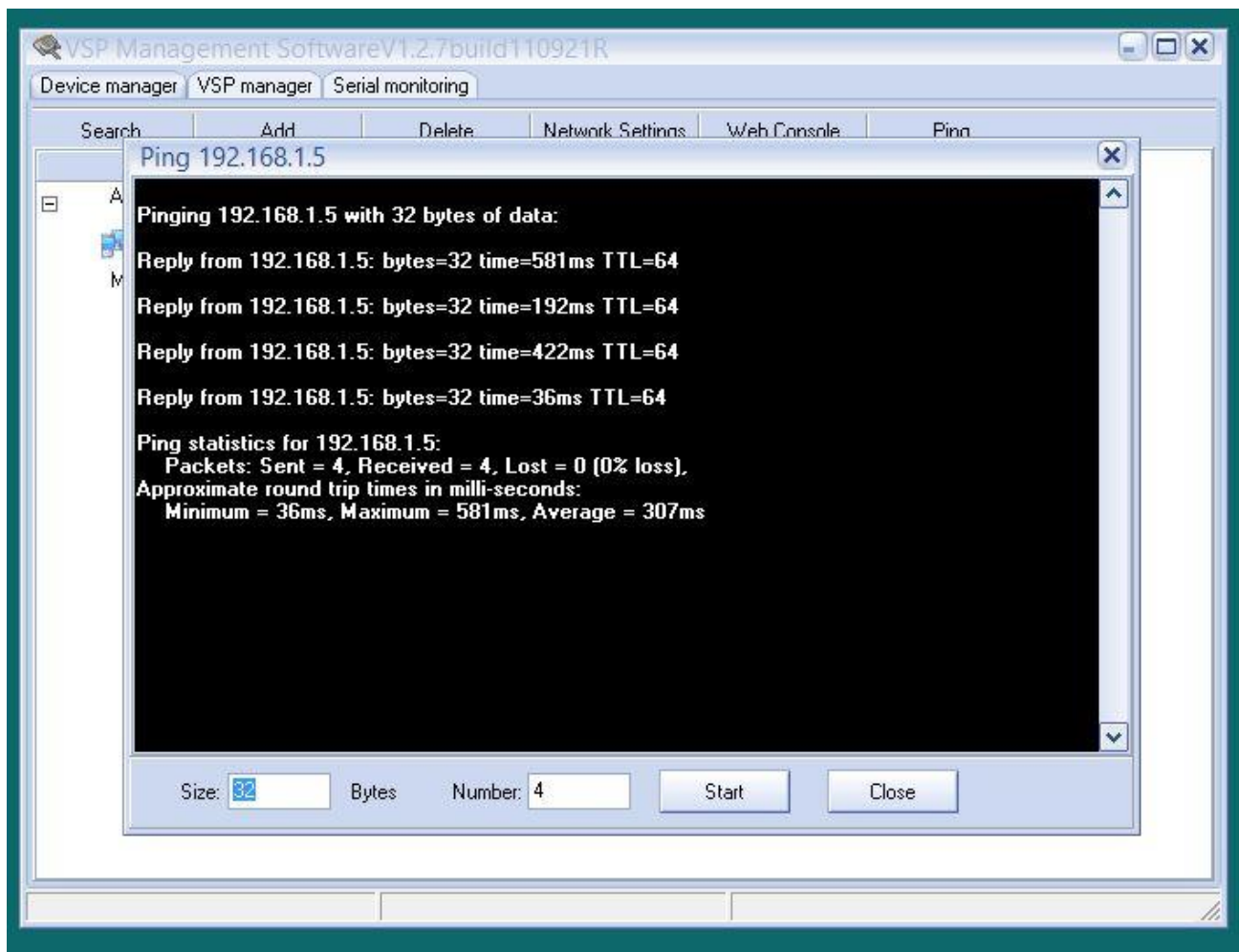
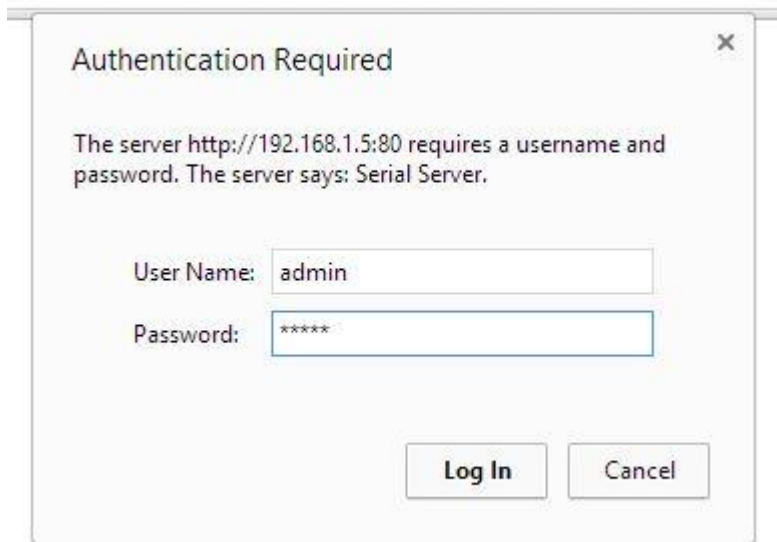


FIGURE 4.26 – PING TEST

4.2.8 ETH-SER-EE9 SERIAL DEVICE SERVER (UNIT 2) BROWSER CONFIGURATION

- 1) Now enter the browser utility which is part of the VSP Management Software or your PC's browser and enter the IP of the device. An authorization screen will come up. The default user name is "admin" and password is "admin". (SEE FIGURE 4.27).



Authentication Required

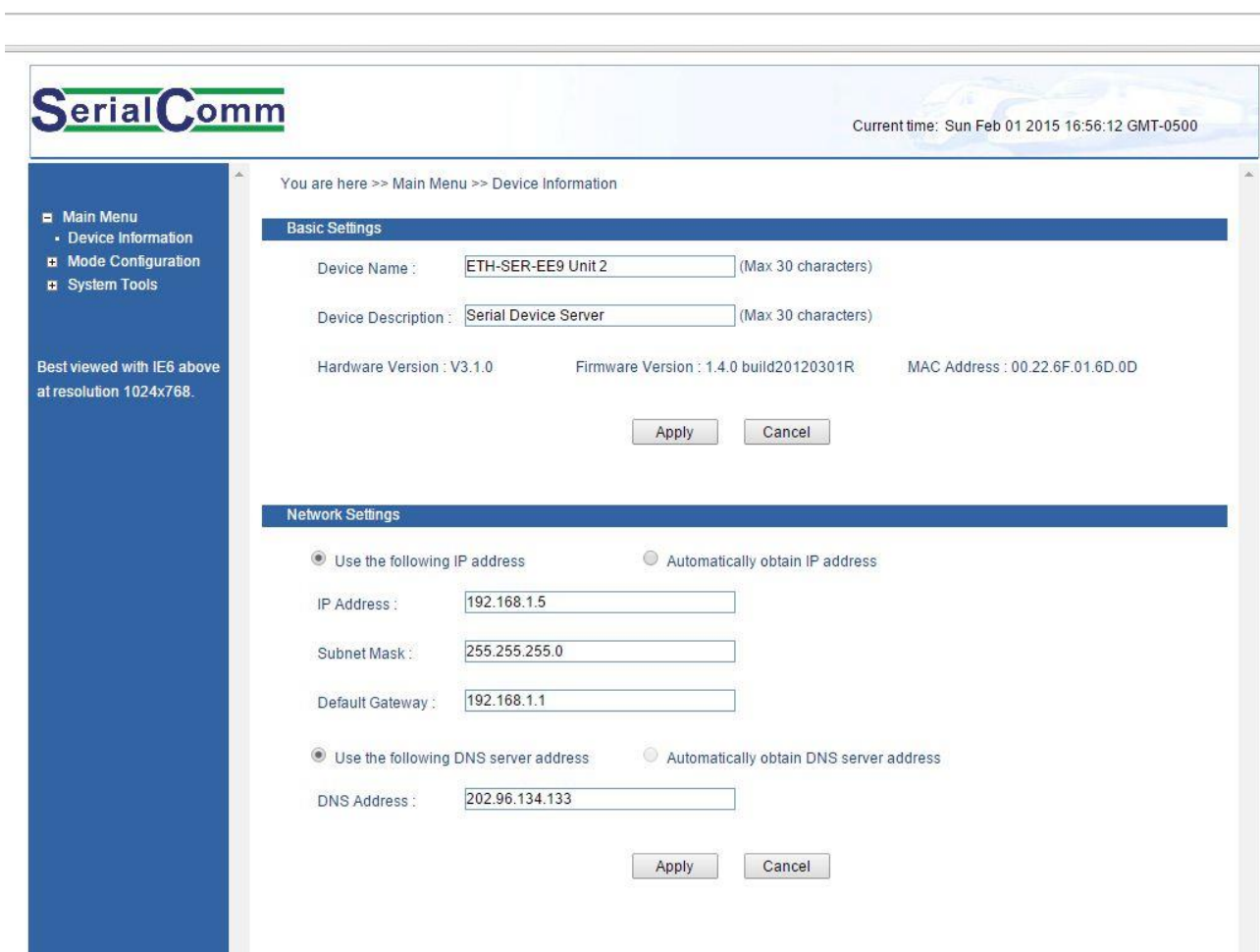
The server http://192.168.1.5:80 requires a username and password. The server says: Serial Server.

User Name:

Password:

FIGURE 4.27 – AUTHENTICATION SCREEN

2) The online configuration tool will come up. (SEE FIGURE 4.28).



SerialComm Current time: Sun Feb 01 2015 16:56:12 GMT-0500

You are here >> Main Menu >> Device Information

Basic Settings

Device Name : (Max 30 characters)

Device Description : (Max 30 characters)

Hardware Version : V3.1.0 Firmware Version : 1.4.0 build20120301R MAC Address : 00.22.6F.01.6D.0D

Network Settings

☒ Use the following IP address ☐ Automatically obtain IP address

IP Address :

Subnet Mask :

Default Gateway :

☒ Use the following DNS server address ☐ Automatically obtain DNS server address

DNS Address :

Best viewed with IE6 above at resolution 1024x768.

FIGURE 4.28 – BROWSER CONFIGURATION TOOL

3) Under the Serial Settings we will not be changing any values. (The serial settings are necessary if you are using a virtual COM port for the Ethernet Port).

4) The Work Mode Settings are set as a TCP Client.

- a. Set as TCP Client.
- b. Port number is an unused port it must be different than unit 1. We are using 30001
- c. We must enter the destination address. In our case it is 192.168.1.4.
- d. We must enter the destination port. In our case it is 30001.
- e. RealCom must be closed (we are not using a virtual port).
- f. The rest of the values are not used in TCP Client mode.
(SEE FIGURE 4.29).

The screenshot shows the SerialComm web interface. The top header has the 'SerialComm' logo and the current time: 'Mon Jan 19 2015 22:16:35 GMT-0500'. A breadcrumb trail reads: 'You are here >> Main Menu >> Mode Configuration >> Serial Settings'. The left sidebar contains a menu with 'Main Menu', 'Device Information', 'Mode Configuration' (selected), 'Serial Settings' (sub-selected), 'AT Command Settings', and 'System Tools'. Below the menu is a note: 'Best viewed with IE6 above at resolution 1024x768.' The main content area is divided into two sections. The 'Serial Settings' section has fields for: Serial Work Mode (RS-232), Baud Rate (115200), Parity Bits (None), Data Bits (8), Stop Bits (1), Max Data Packets (500), Character Delay (5), and Overtime Times (201). The 'Work Mode Settings' section is a table with columns: Sessions, Work Mode, Local Port, Destination Address, Destination Port, Connection Mode, Keep-alive, and RealCom. It lists four sessions: 1) TCP Client, Local Port 30001, Destination 192.168.1.4, Port 30000, Connect Now, 300s, RealCom closed. 2) TCP Serve, Local Port 30001, Destination 192.168.2.3, Port 31001, Connect Now, 300s, RealCom closed. 3) TCP Serve, Local Port 30002, Destination 192.168.2.3, Port 31002, Connect Now, 300s, RealCom closed. 4) TCP Serve, Local Port 30003, Destination 192.168.2.3, Port 31003, Connect Now, 300s, RealCom closed. 'Apply' and 'Cancel' buttons are at the bottom.

Sessions	Work Mode	Local Port (1~65535)	Destination Address	Destination Port (1~65535)	Connection Mode	Keep-alive (0~65535)s	RealCom
<input checked="" type="checkbox"/>	TCP Client	30001	192.168.1.4	30000	Connect Now	300	Close
<input type="checkbox"/>	TCP Serve	30001	192.168.2.3	31001	Connect Now	300	Close
<input type="checkbox"/>	TCP Serve	30002	192.168.2.3	31002	Connect Now	300	Close
<input type="checkbox"/>	TCP Serve	30003	192.168.2.3	31003	Connect Now	300	Close

FIGURE 4.29 – SERIAL AND WORK MODE SETTINGS

5) Exit the browser configuration.

4.2.9 SERIAL-TO-SERIAL VIA ETHERNET TEST

1) We are now connecting the two USB-232-2 - USB to RS232 adapters to a null modem adapters and then to the ETH-SER-EE9 serial DB9 ports. We are using a USB to RS-232 adapter because the computer we are using does not have a serial port. Make sure the Ethernet is attached between both ETH-SER-EE9s and the network portion of the IPs are still the same. We will need to open two instances of AccessPort since data is transmitted and received by two different ports; one for each USB adapter.

- a. Connect the USB-232-2 adapter to the USB port of the PC or laptop.
- b. You will hear a beep sound. This means that the adapter driver was installed.

- c. A virtual COM port is automatically created.
- d. Connect the other USB-232-2 adapter to the USB port of the PC or laptop.
- e. You will hear a beep sound. This means that the adapter driver was installed.
- f. A second virtual COM port is automatically created.

2) Determine which COM ports you are using. The ports list of the device manager of control panel will show you the used COM ports. (SEE FIGURE 4.30).

CONTROL PANEL→HARDWARE AND SOUND→DEVICE MANAGER→PORTS (COM & LPT)

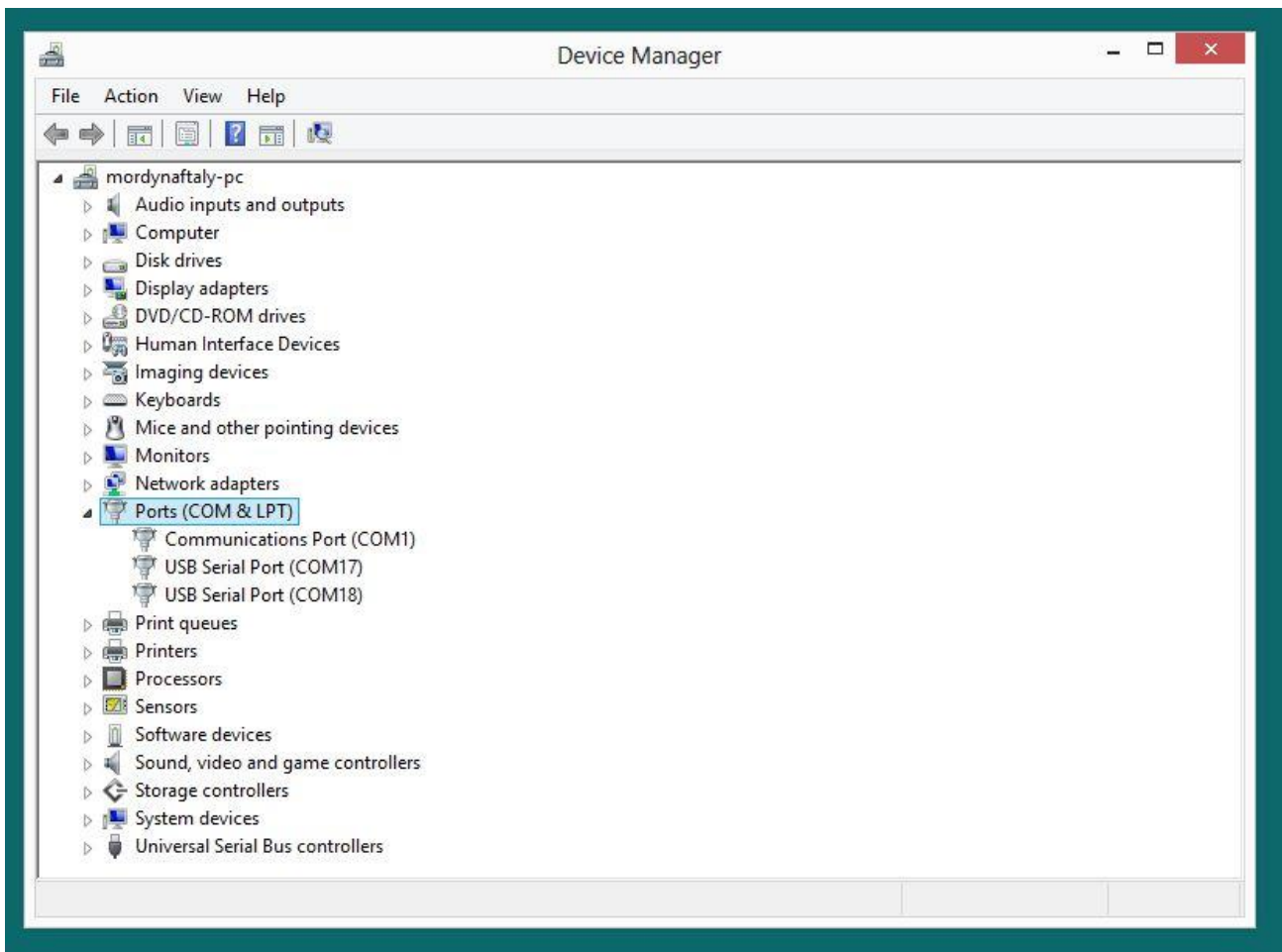


FIGURE 4.30 – CONTROL PANEL – PORTS ASSIGNMENTS

3) In AccessPort select the yellow and green gear for each instance. Choose the COM ports and serial settings. Select “Enable Auto Send” and select OK. (SEE FIGURE 4.31).

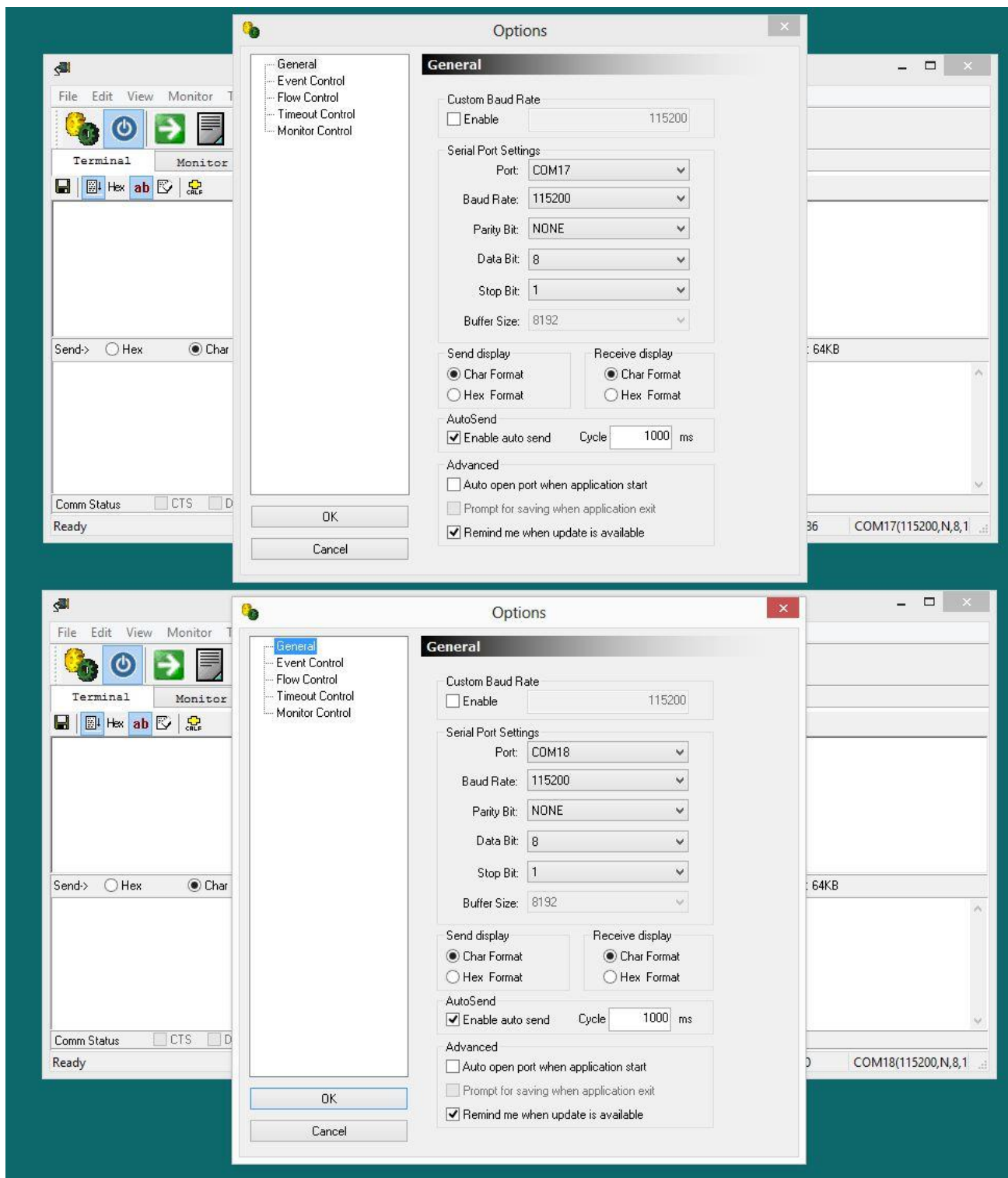


FIGURE 4.31 – ACCESSPORT SERIAL CONFIGURATION

- 4) In the output message box you can enter “1 2 3 5” and the other output message box you can enter “A B C D E”.
- 5) In the input message boxes you should see the strings being received repeatedly. (SEE FIGURE 4.32).

4.3 APPLICATION 3 – ETHERNET TO ETHERNET VIA SERIAL MODE

4.3.1 APPLICATION 3 OVERVIEW

Ethernet to Ethernet via serial - POINT-TO-POINT is another possible application of the ETH-SER-EE9. When choosing this mode the Ethernet will be connected to LAN devices or PCs/laptops from of both converters. The serial ports of the converters will be attached to each other through a serial connection. The serial ports can be either RS-232, RS-485 or RS-422 and must be matched on both ends. (SEE FIGURES 4.33, 4.34. 4.35).

In this example, we will be connecting the two Ethernet ports of the ETH-SER-EE9 converters to two PCs and connecting the serial (RS-232) port directly from one converter to the other. Both RS-232 ports will be connected to the DB9 connector of the converter with a null modem crossover cable or adapter since both converters are DTEs (servers). We will need to open two instances of AccessPort one on each PC since we will be monitoring two virtual COM ports for the Ethernet connections. However, before setting up this configuration we must first configure the converter with the VSP Management Software.

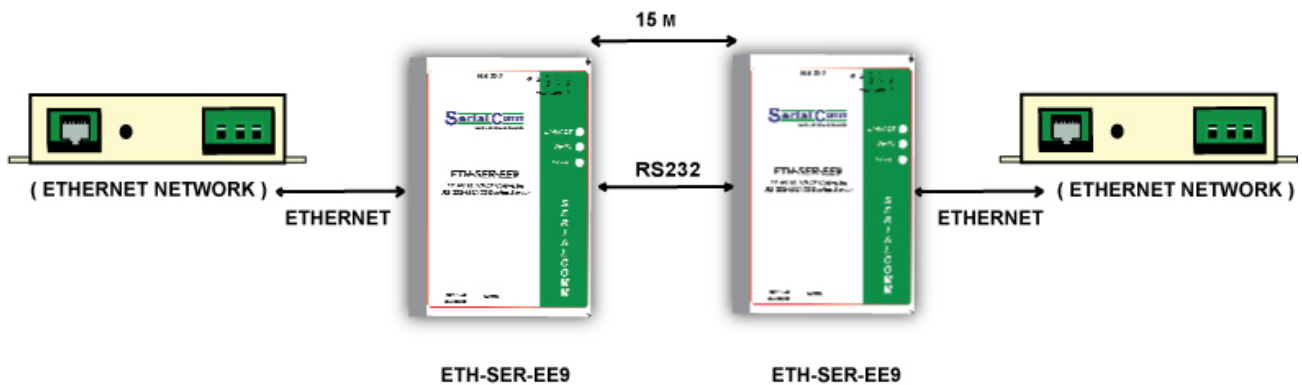


FIGURE 4.33 – ETHERNET POINT-TO-POINT CONFIGURATION VIA RS-232 SERIAL

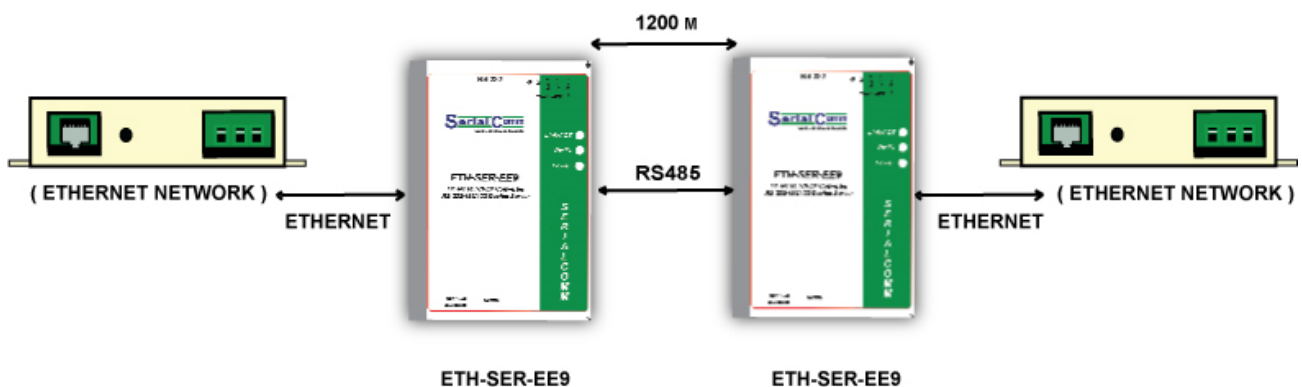


FIGURE 4.34 – ETHERNET POINT-TO-POINT CONFIGURATION VIA RS-485 SERIAL

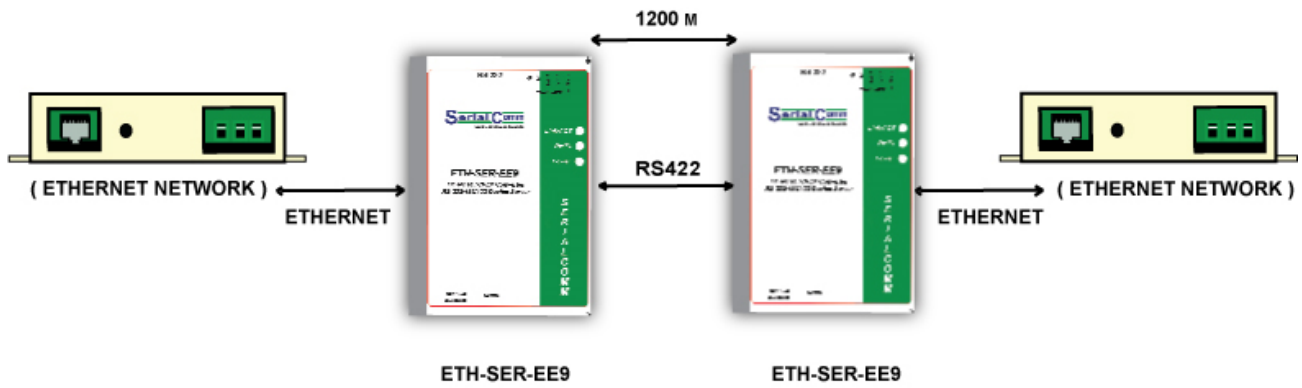


FIGURE 4.35 – ETHERNET POINT-TO-POINT CONFIGURATION VIA RS-422 SERIAL

4.3.2 INSTALLATION OF THE VSP MANAGEMENT CONFIGURATION SOFTWARE

The VSP Management Software must be first installed on the host Windows based PC or laptop that will connect to the ETH-SER-EE9 via an Ethernet network. See Section 2 and 3 of the VSP Management V1.2.7 User Manual included in the software CD supplied with the ETH-SER-EE9.

4.3.3 INSTALLATION OF THE ETH-SER-EE9 SERIAL DEVICE SERVER (UNIT 1)

Now that the VSP Management Software is installed, in order for it to function properly it needs to communicate with the ETH-SER-EE9. The ETH-SER-EE9 now needs to be connected to the host with the VSP software installed.

- 1) The ETH-SER-EE9's default IP address is 192.168.1.X subnet 255.255.255.0 for the network segment. The default user name is admin and the default password is admin. These default settings will be changed later after installation.
- 2) Unpack the ETH-SER-EE9. It includes the unit, a power supply, and an Ethernet cable.
- 3) Connect the power supply to the converter. Wire V+ of the power supply goes to terminal post V+ of the converter and wire V- of the power supply goes to terminal post V- of the converter.
- 4) Power the ETH-SER-EE9. The power green LED should be lit.
- 5) Connect the Ethernet cable to the ETH-SER-EE9; either directly to the PC, laptop, or to the connecting network. Once the Ethernet cable is attached, the green Link/ACT LED should be lit.

4.3.4 ETH-SER-EE9 SERIAL DEVICE SERVER (UNIT 1) CONFIGURATION USING THE VSP MANAGEMENT SOFTWARE

The ETH-SER-EE9 default IP address is 192.168.1.254 subnet mask 255.255.255.0. When the ETH-SER-EE9 is accessed through the web browser, the Local Area Network portion of the IP address must be the same. The device IP must be unused portion of the IP network portion making the device IP address unique. There are two methods to do this; one is to change the IP of the PC/laptop to match that of the ETH-SER-EE9 (not

possible in WIN 7 and WIN 8) or change the IP of the ETH-SER-EE9 to match that of the PC/laptop/connecting network. In this example we will be changing the IP address of the ETH-SER-EE9.

- 1) The first step is to find out what is the IP of the PC/laptop/connecting network. This can be done from the PC/laptop WIN control panel.

Control Panel → Network and Internet → Network and Sharing Center → Connect of Ethernet Connections → Details

- 2) You will see the Ethernet IP and subnet mask. Our IP address is 192.168.1.3. Our subnet mask is 255.255.255.0 and Default Gateway is 192.168.1.1. Your information will be different. (SEE FIGURE 4.36).

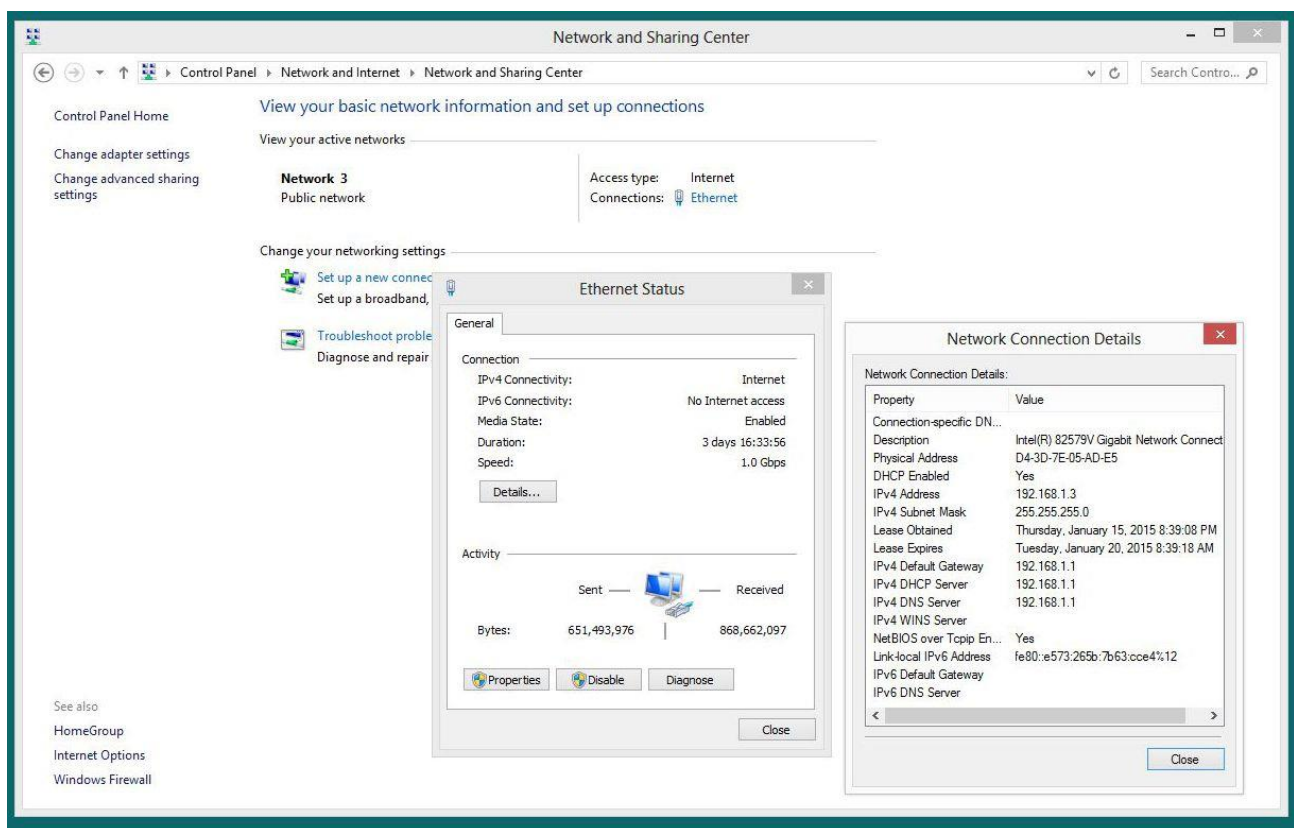


FIGURE 4.36 – PC/LAPTOP LAN INFORMATION

- 3) Make sure the ETH-SER-EE9 is connected to power and the Ethernet cable is connected to the PC directly or indirectly.
- 4) Run the VSP management software. (SEE FIGURE 4.37).

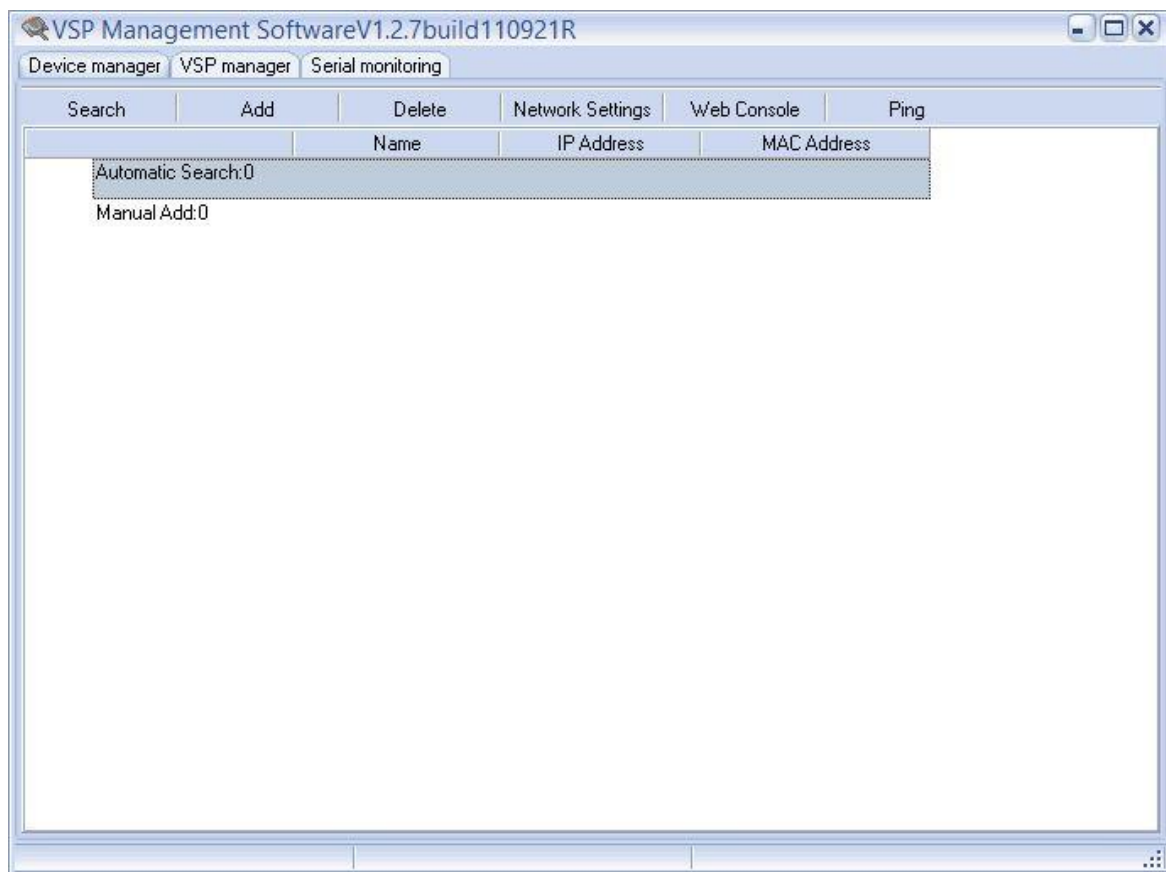


FIGURE 4.37 – VSP MANAGEMENT SOFTWARE

- 5) Search for the attached ETH-SER-EE9 device. Our name is ETH-SER-EE9 Unit 1, IP 169.254.138.241 MAC 00-22-6F-01-6D-0D. (SEE FIGURE 4.38).

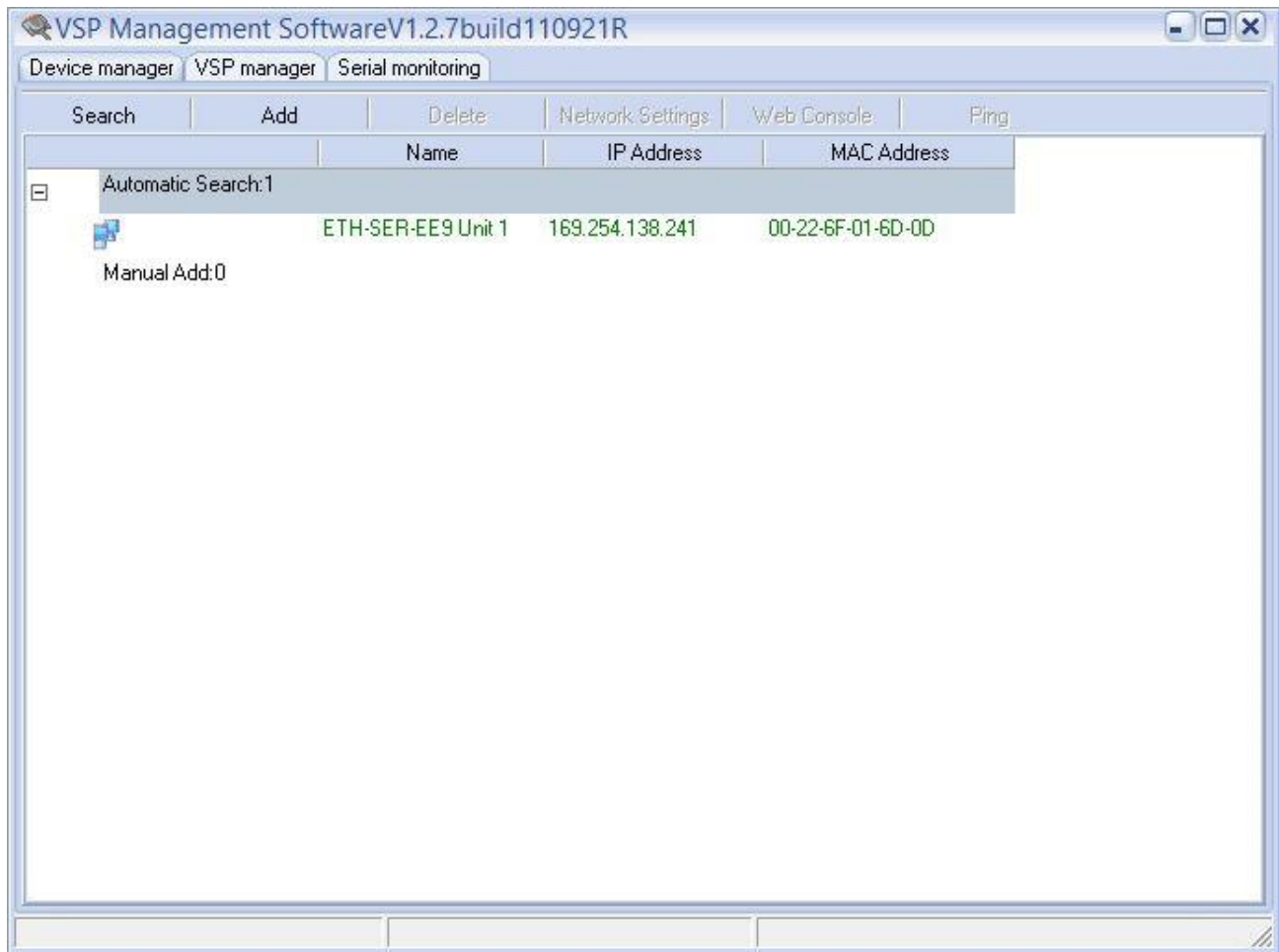


FIGURE 4.38 – SEARCH ETH-SER-EE9 DEVICE

- 6) Highlight the search results and select Network Settings. Now you must put in the correct IP information. Our IP will be 192.168.1.4 - 192.168.1 for the matched network and 4 for the unique ID. Enter the subnet mask. Our subnet mask is 255.255.255.0 (the three 255s masks the network id and 0 masks the unique ID). The Default Gateway is 192.168.1.1. Your information will be different. (SEE FIGURE 4.39).

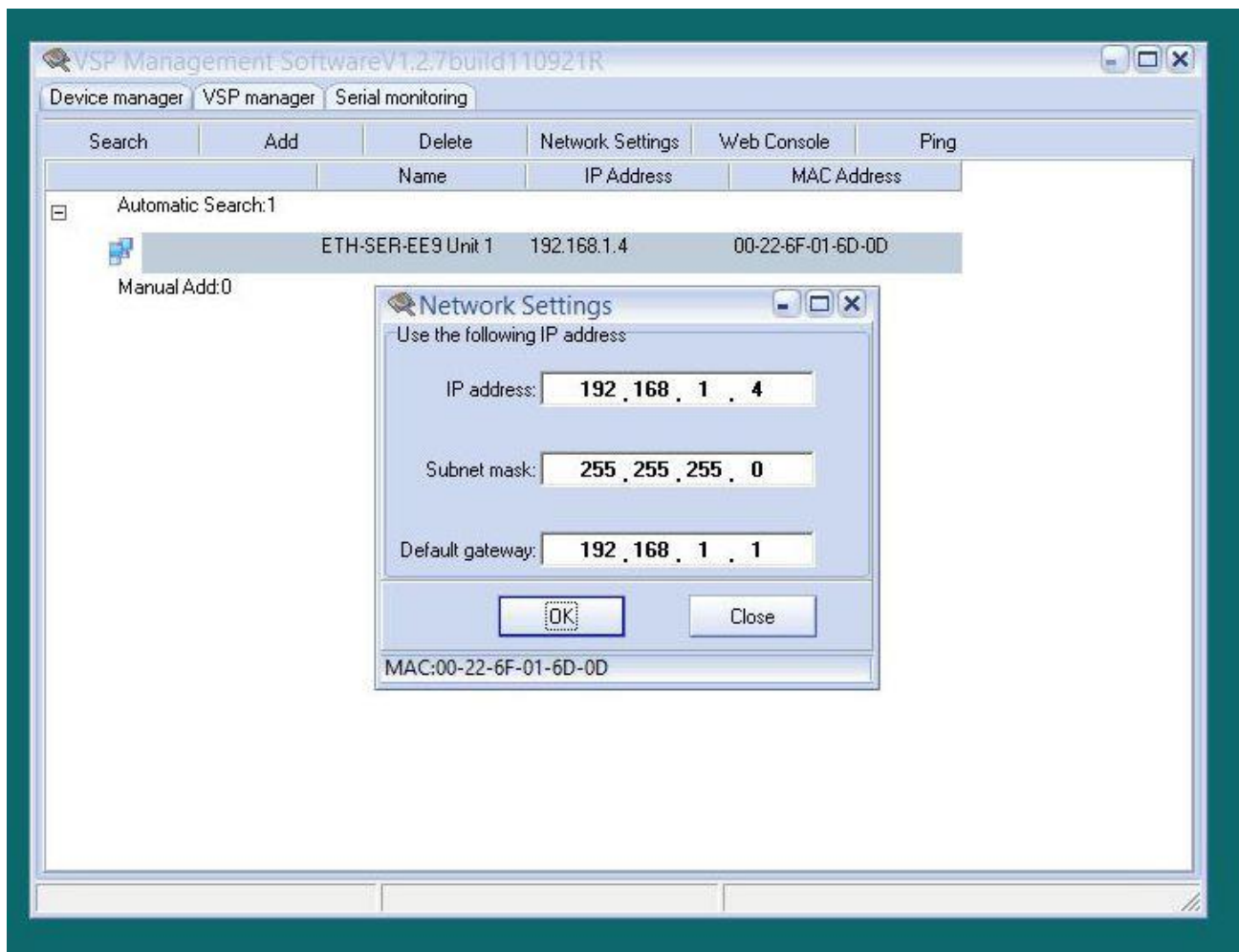


FIGURE 4.39 – ALTERING THE NETWORK SETTINGS

- 7) You can do a PING test to see if the DEVICE is responsive. (SEE FIGURE 4.40).

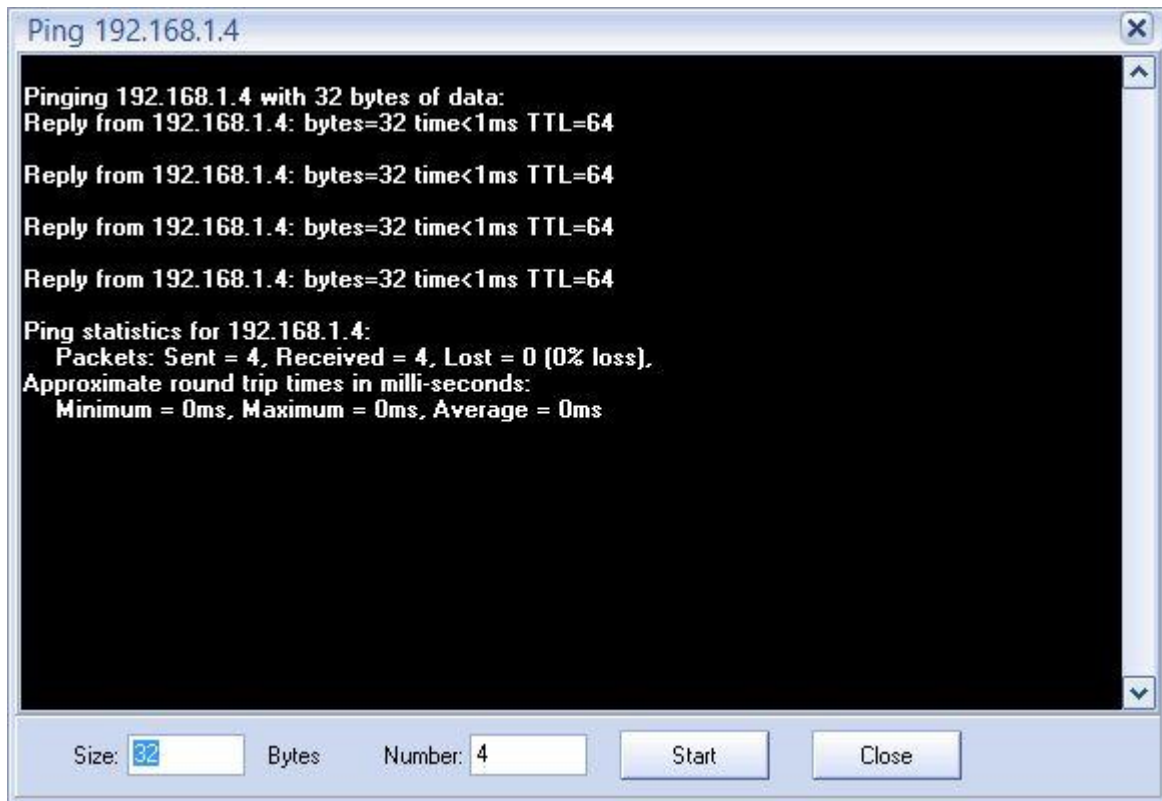


FIGURE 4.40 – PING TEST

- 8) Next for the ETHERNET PORT we will be setting up a Virtual COM Port. Choose VSP Manager and then New. Select an unused COM Port. We are using COM 2. Select an unused port number. We chose 30001. Press ADD and make sure the RealCom option is checked. (SEE FIGURE 4.41).

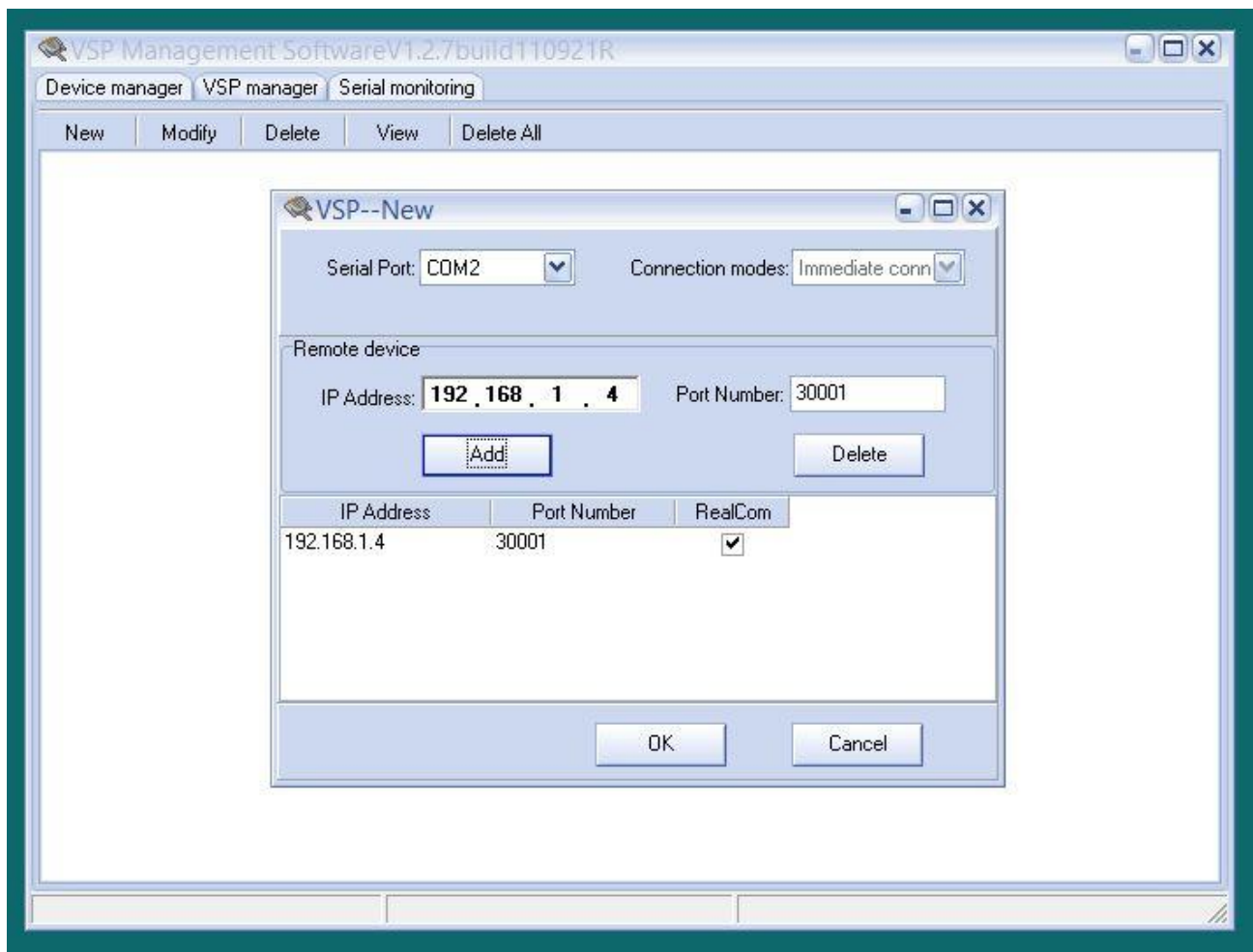
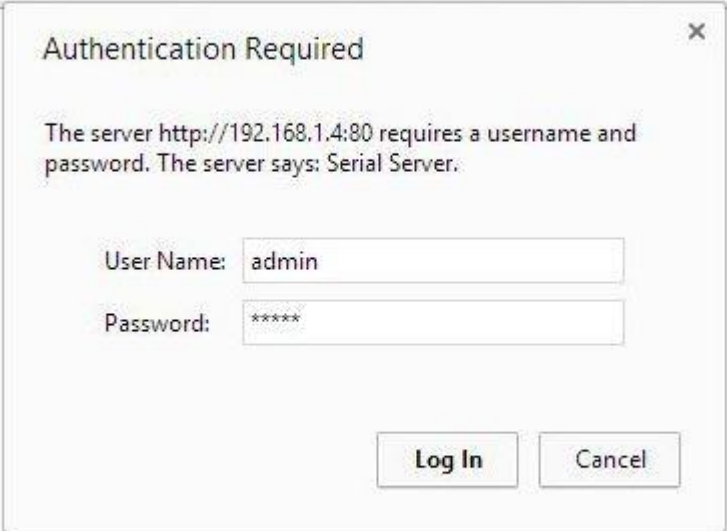


FIGURE 4.41 – VIRTUAL COM PORT SETTING

4.3.5 ETH-SER-EE9 SERIAL DEVICE SERVER (UNIT 1) BROWSER CONFIGURATION

- 1) Now enter the browser utility which is part of the VSP Management Software or your PC's browser and enter the IP of the device. An authorization screen will come up. The default user name is "admin" and password is "admin". (SEE FIGURE 4.42).



Authentication Required

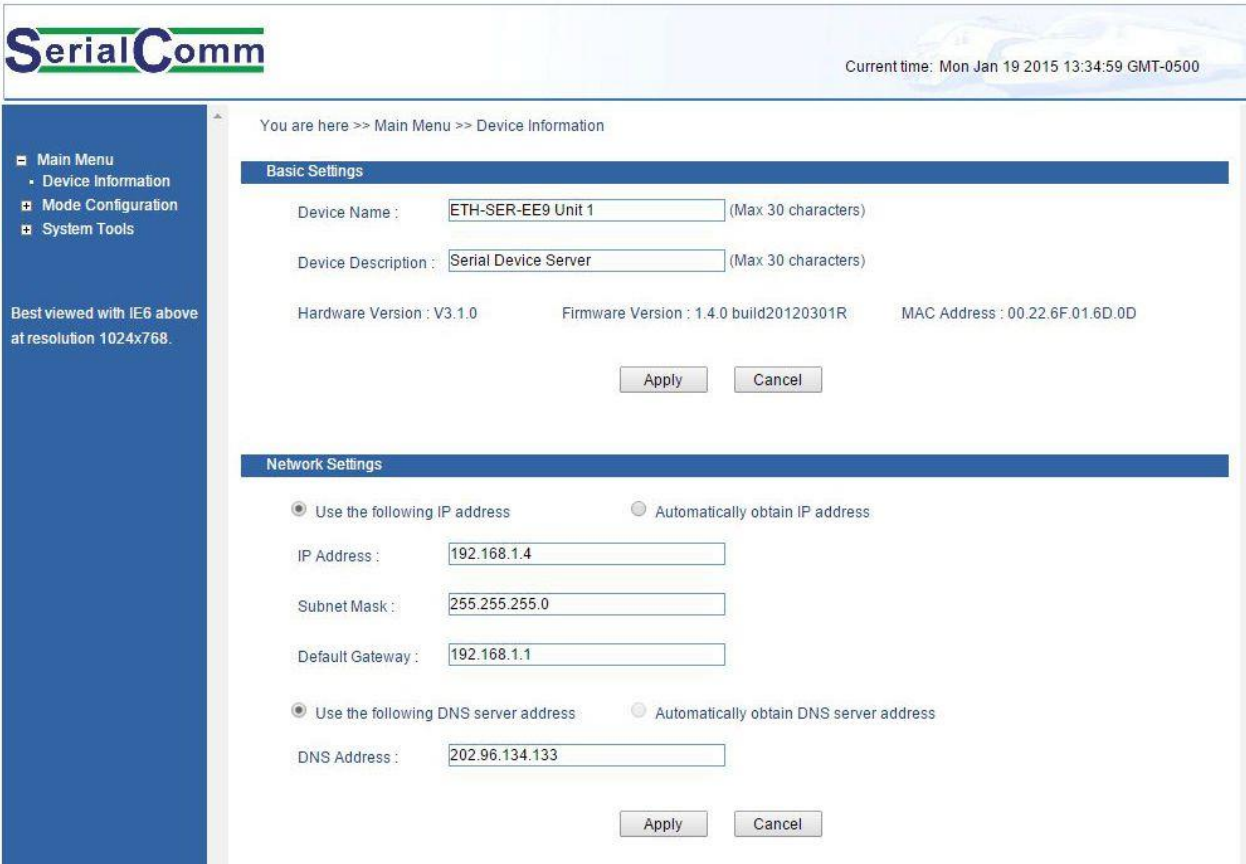
The server http://192.168.1.4:80 requires a username and password. The server says: Serial Server.

User Name:

Password:

FIGURE 4.42 – AUTHENTICATION SCREEN

2) The online configuration tool will come up. (SEE FIGURE 4.43).



SerialComm Current time: Mon Jan 19 2015 13:34:59 GMT-0500

You are here >> Main Menu >> Device Information

- Main Menu
 - Device Information
 - Mode Configuration
 - System Tools

Best viewed with IE6 above at resolution 1024x768.

Basic Settings

Device Name : (Max 30 characters)

Device Description : (Max 30 characters)

Hardware Version : V3.1.0 Firmware Version : 1.4.0 build20120301R MAC Address : 00.22.6F.01.6D.0D

Network Settings

☒ Use the following IP address ☐ Automatically obtain IP address

IP Address :

Subnet Mask :

Default Gateway :

☒ Use the following DNS server address ☐ Automatically obtain DNS server address

DNS Address :

FIGURE 4.43 – BROWSER CONFIGURATION TOOL

- 3) Under the Serial Settings (the serial settings are necessary if you are using a virtual COM port for the Ethernet Port).

These should be default values.

- a. We are select RS-232 as our protocol.
- b. 115,200 as our baud rates.
- c. Parity is none.
- d. Data Bits are 8.
- e. Stop Bites is 1.
- f. Max Data Packet is 500.
- g. Character Delay 5.
- h. Overtime times: 201.

- 4) The Work Mode Settings are set as a TCP Server.

- a. Set as TCP Server.
- b. Port number is the port selected in VSP Virtual COM port manager. We are using 30001.
- c. RealCom must be “open” since we are using a virtual port.
- d. The rest of the values are not used in TCP Server mode.
(SEE FIGURE 4.44).

The screenshot shows the SerialComm web interface. The top header includes the 'SerialComm' logo and the current time: 'Wed Jan 21 2015 15:04:56 GMT-0500'. A breadcrumb trail indicates the current location: 'You are here >> Main Menu >> Mode Configuration >> Serial Settings'.

Serial Settings

Serial Work Mode: **RS-232** | Baud Rate(bps): **115200** | Parity Bits: **None**

Data Bits(bits): **8** | Stop Bits(bits): **1** | Max Data Packets: **500** (1~1024)bytes

Character Delay: **5** (1~500)ms | Overtime Times: **201** (0~60000)ms

Work Mode Settings

Sessions	Work Mode	Local Port (1~65535)	Destination Address	Destination Port (1~65535)	Connection Mode	Keep-alive (0~65535)s	RealCom
<input checked="" type="checkbox"/>	TCP Serve	30001	IP 192.168.1.4	30000	Connect Now	300	Open
<input type="checkbox"/>	TCP Serve	30001	IP 192.168.2.3	31001	Connect Now	300	Close
<input type="checkbox"/>	TCP Serve	30002	IP 192.168.2.3	31002	Connect Now	300	Close
<input type="checkbox"/>	TCP Serve	30003	IP 192.168.2.3	31003	Connect Now	300	Close

Buttons: Apply, Cancel

Left sidebar menu: Main Menu, Device Information, Mode Configuration, Serial Settings, AT Command Settings, System Tools. Note: Best viewed with IE6 above at resolution 1024x768.

FIGURE 4.44 – SERIAL AND WORK MODE SETTINGS

- 5) Exit the browser configuration.

4.3.6 INSTALLATION OF THE ETH-SER-EE9 SERIAL DEVICE SERVER (UNIT 2)

The ETH-SER-EE9 Unit 2 now needs to be connected to the host with the VSP software installed.

- 1) The ETH-SER-EE9's default IP address is 192.168.1.X subnet 255.255.255.0 for the network segment. The default user name is admin and the default password is admin. These default settings will be changed later after installation.
- 2) Unpack the ETH-SER-EE9. It includes the unit, a power supply, and an Ethernet cable.
- 3) Connect the power supply to the converter. Wire V+ of the power supply goes to terminal post V+ of the converter and wire V- of the power supply goes to terminal post V- of the converter.
- 4) Power the ETH-SER-EE9. The power green LED should be lit.
- 5) Connect the Ethernet cable to the ETH-SER-EE9; either directly to the PC, laptop, or to the connecting network. Once the Ethernet cable is attached, the green Link/ACT LED should be lit.

4.3.7 ETH-SER-EE9 SERIAL DEVICE SERVER (UNIT 2) CONFIGURATION USING THE VSP MANAGEMENT SOFTWARE

The ETH-SER-EE9 default IP address is 192.168.1.254 subnet mask 255.255.255.0. When the ETH-SER-EE9 is accessed through the web browser, the Local Area Network portion of the IP address must be the same. The device IP must be unused portion of the IP network portion making the device IP address unique. There are two methods to do this; one is to change the IP of the PC/laptop to match that of the ETH-SER-EE9 (not possible in WIN 7 and WIN 8) or change the IP of the ETH-SER-EE9 to match that of the PC/laptop/connecting network. In this example we will be changing the IP address of the ETH-SER-EE9.

- 1) We know the Ethernet IP of our PC is 192.168.1.3. Our subnet mask is 255.255.255.0 and Default Gateway is 192.168.1.1. We chose IP 192.168.1.4 for unit 1. We will choose IP 192.168.1.5 for unit 2.
- 2) Make sure the ETH-SER-EE9 (Unit 2) is connected to power and the Ethernet cable is connected to the PC directly or indirectly.
- 3) Run the VSP management software.
- 4) Search for the attached ETH-SER-EE9 device. Our name is ETH-SER-EE9 Unit 2, IP 192.168.1.99 MAC 00-22-6F-01-6D-0C. (SEE FIGURE 4.45)

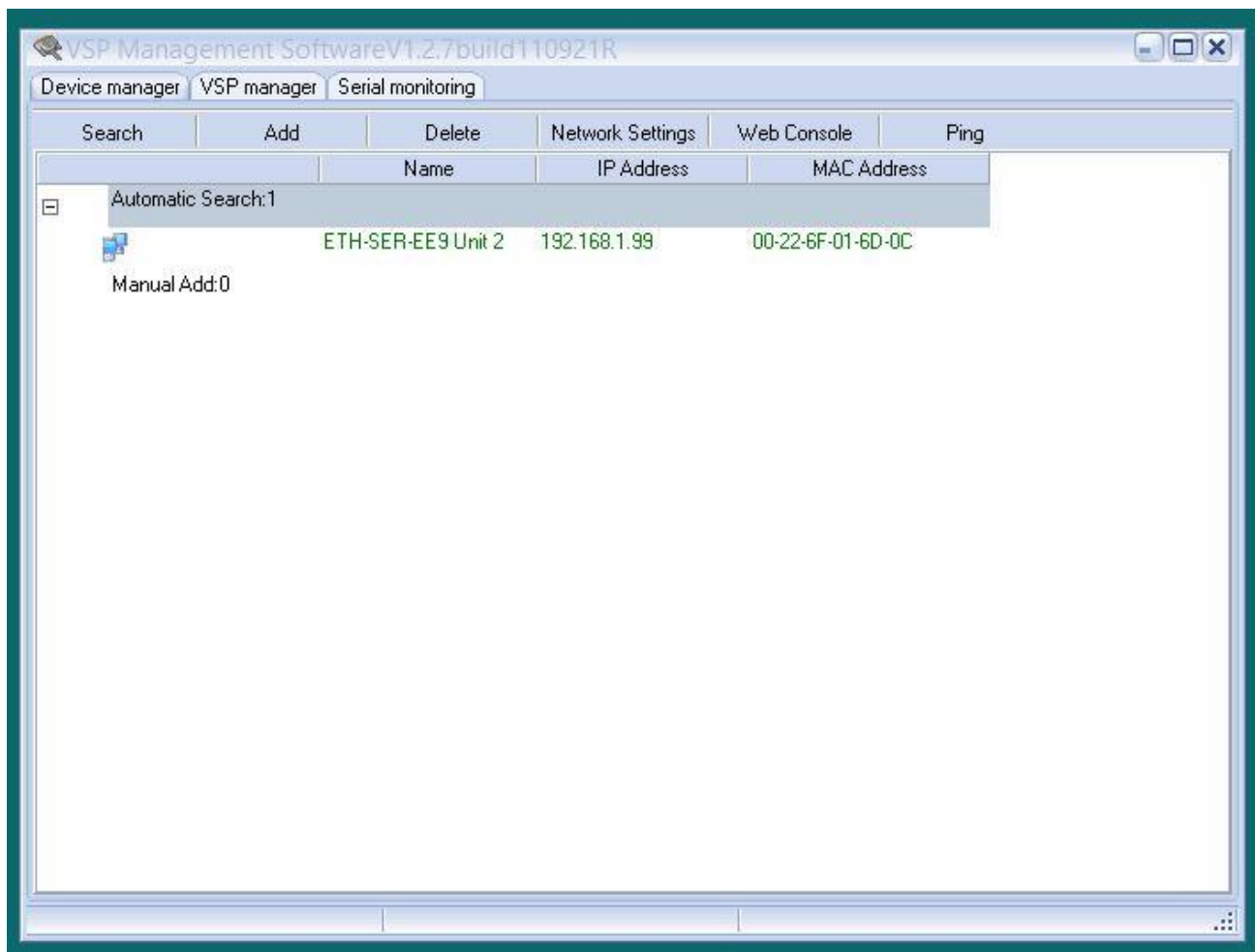


FIGURE 4.45 – SEARCH ETH-SER-EE9 DEVICE

- 5) Highlight the search results and select Network Settings. Now you must put in the correct IP information. Our IP will be 192.168.1.99 - 192.168.1 for the matched network and 99 for the unique ID. Enter the subnet mask. Our subnet mask is 255.255.255.0 (the three 255s masks the network id and 0 masks the unique ID). The Default Gateway is 192.168.1.1. Your information will be different. (SEE FIGURE 4.46).

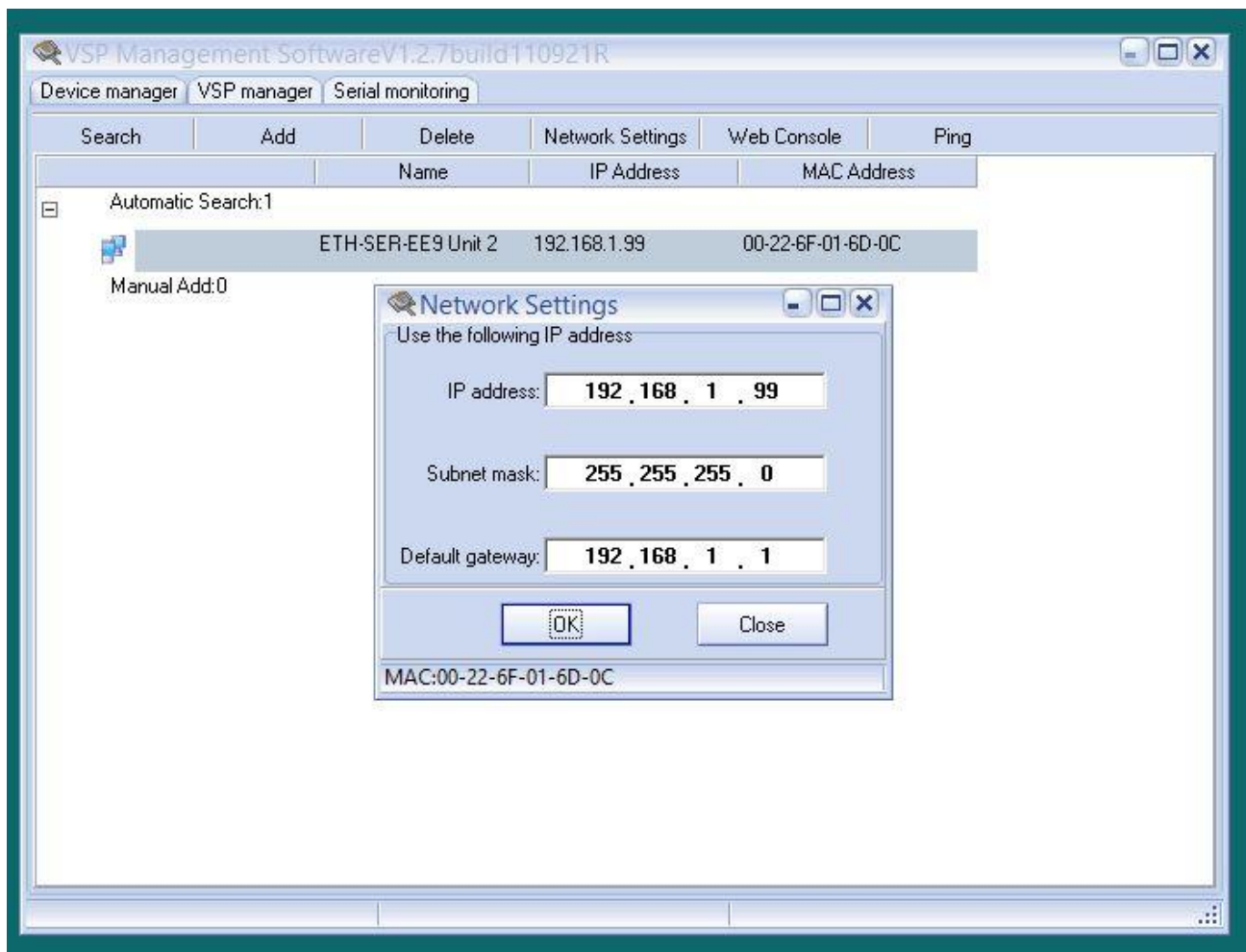


FIGURE 4.46 – ALTERING THE NETWORK SETTINGS

6) You can do a PING test to see if the DEVICE is responsive. (SEE FIGURE 4.47).

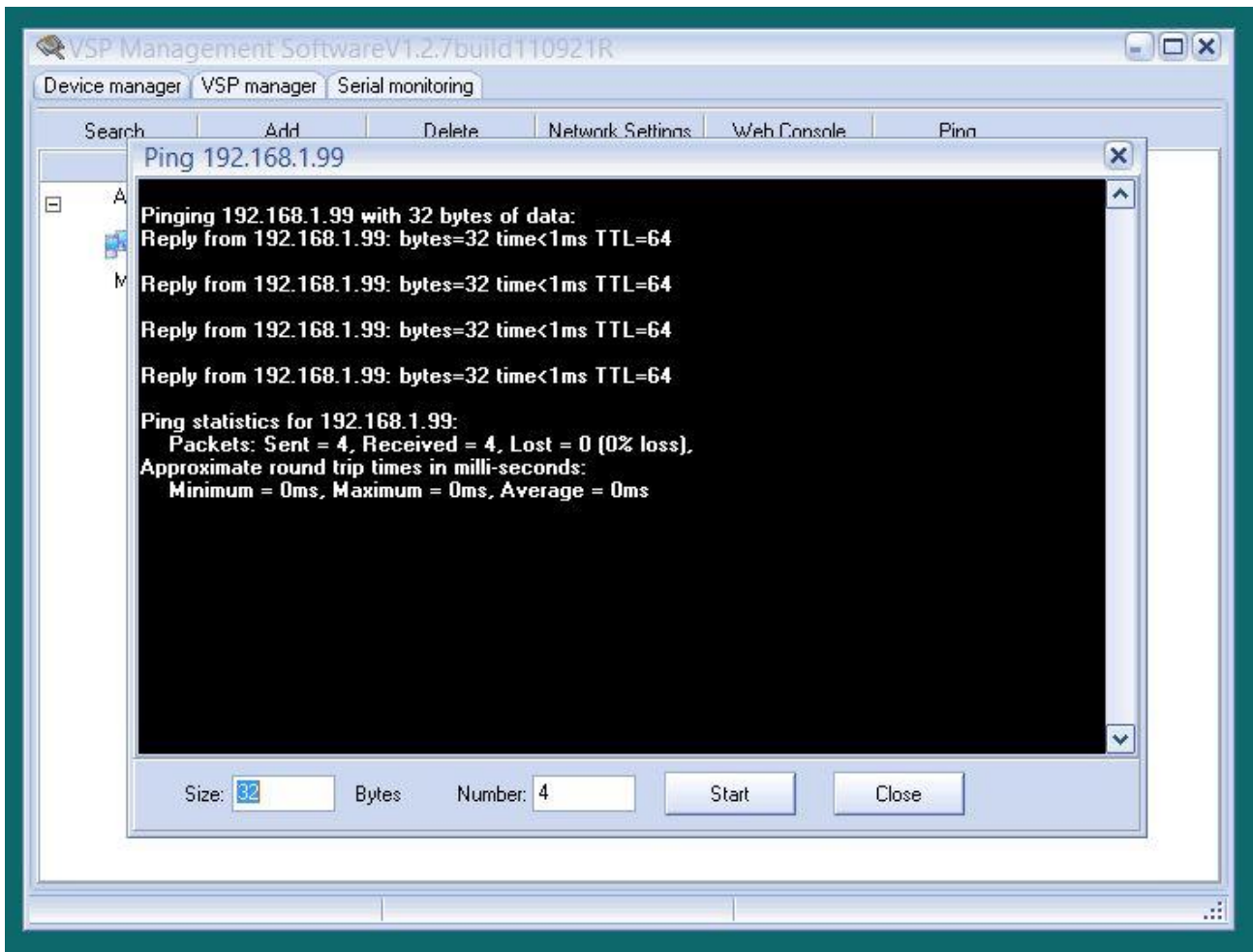


FIGURE 4.47 – PING TEST

- 7) Next for the ETHERNET PORT we will be setting up a Virtual COM Port. Choose VSP Manager and then New. Select an unused COM Port. We are using COM 6. Select an unused port number. We chose 30002. Press ADD and make sure the RealCom option is checked. (SEE FIGURE 4.48).

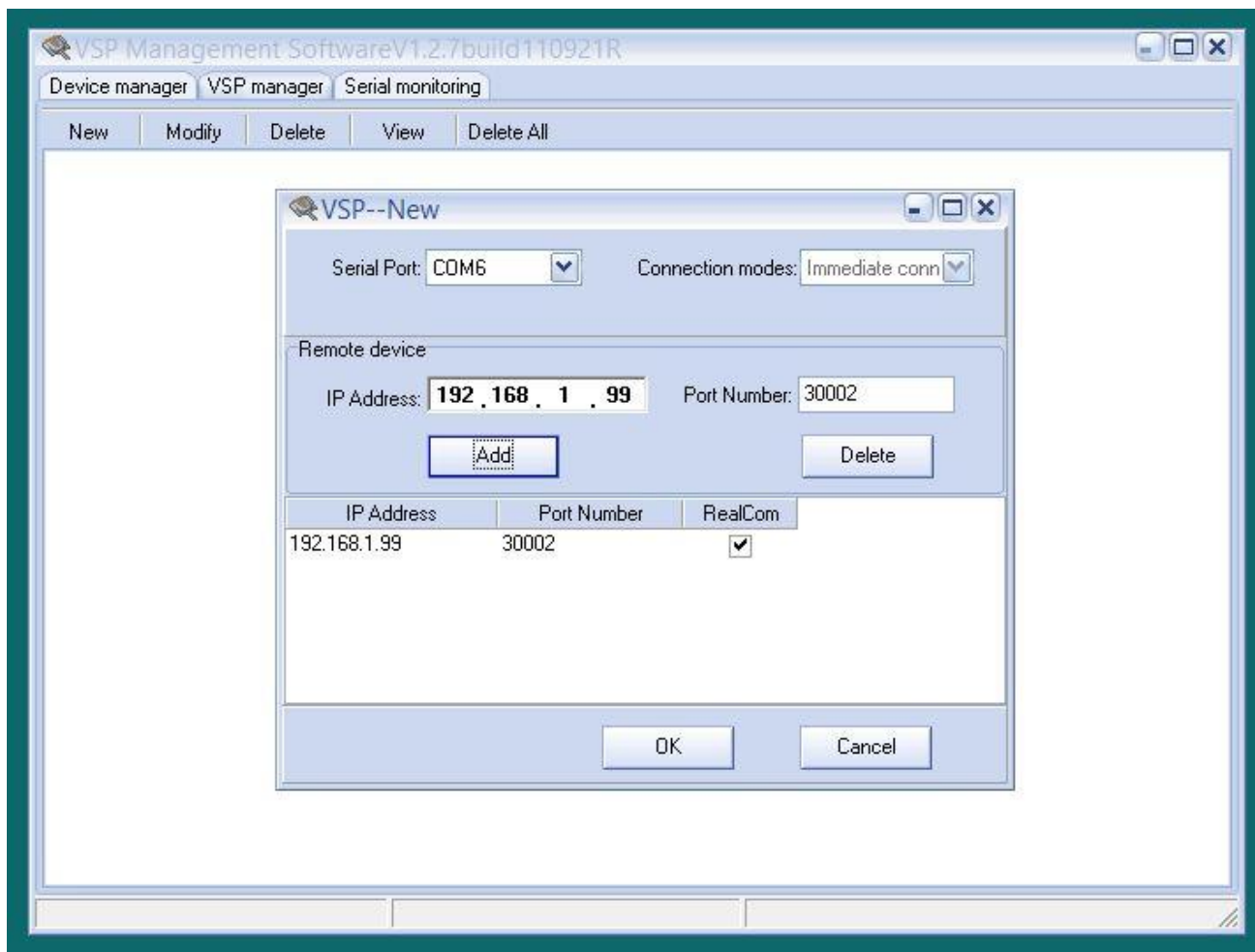


FIGURE 4.48 – VIRTUAL COM PORT SETTING

4.3.8 ETH-SER-EE9 SERIAL DEVICE SERVER (UNIT 2) BROWSER CONFIGURATION

- 1) Now enter the browser utility which is part of the VSP Management Software or your PC's browser and enter the IP of the device. An authorization screen will come up. The default user name is "admin" and password is "admin". (SEE FIGURE 4.49).

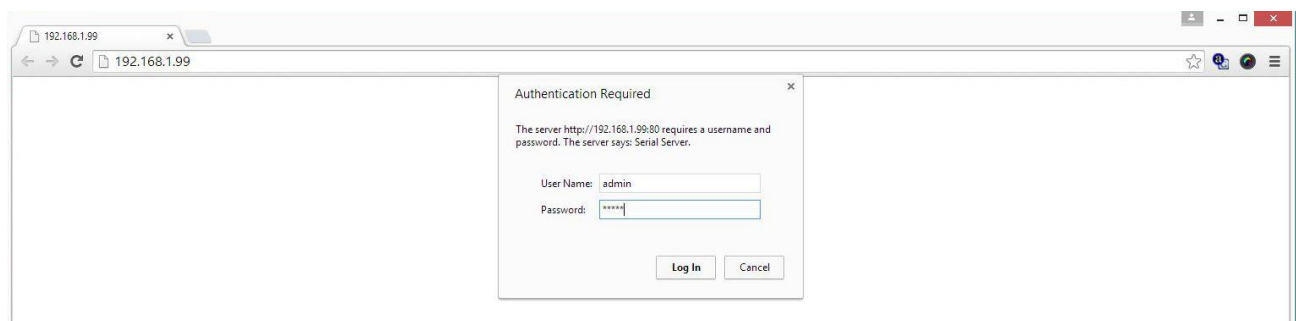


FIGURE 4.49 – AUTHENTICATION SCREEN

- 2) The online configuration tool will come up.
- 3) Under the Serial Settings (The serial settings are necessary if you are using a virtual

COM port for the Ethernet Port).

These should be default values.

- a. We are select RS-232 as our protocol.
- b. 115,200 as our baud rates.
- c. Parity is none.
- d. Data Bits are 8.
- e. Stop Bites is 1.
- f. Max Data Packet is 500.
- g. Character Delay 5.
- h. Overtime times: 201.

4) The Work Mode Settings are set as a TCP Server.

- a. Set as TCP Server.
- b. Port number is the port selected in VSP Virtual COM port manager. We are using 30002.
- c. RealCom must be "open" since we are using a virtual port.
- d. The rest of the values are not used in TCP Server mode.
(SEE FIGURE 4.50).

The screenshot displays the SerialComm web interface. The top header shows the 'SerialComm' logo and the current time: 'Wed Jan 21 2015 15:30:17 GMT-0500'. A breadcrumb trail indicates the path: 'You are here >> Main Menu >> Mode Configuration >> Serial Settings'.

Serial Settings

Serial Work Mode: **RS-232** | Baud Rate(bps): **115200** | Parity Bits: **None**

Data Bits(bits): **8** | Stop Bits(bits): **1** | Max Data Packets: **500** (1~1024)bytes

Character Delay: **5** (1~500)ms | Overtime Times: **201** (0~60000)ms

Work Mode Settings

Sessions	Work Mode	Local Port (1~65535)	Destination Address	Destination Port (1~65535)	Connection Mode	Keep-alive (0~65535)s	RealCom
<input checked="" type="checkbox"/>	TCP Serve	30002	IP 192.168.1.4	30000	Connect Now	300	Open
<input type="checkbox"/>	TCP Serve	30001	IP 192.168.2.3	31001	Connect Now	300	Close
<input type="checkbox"/>	TCP Serve	30002	IP 192.168.2.3	31002	Connect Now	300	Close
<input type="checkbox"/>	TCP Serve	30003	IP 192.168.2.3	31003	Connect Now	300	Close

Buttons: **Apply** **Cancel**

FIGURE 4.50 – SERIAL AND WORK MODE SETTINGS

5) Exit the browser configuration.

4.3.9 ETHERNET TO ETHERNET VIA SERIAL TEST

- 1) We are now connecting the two Ethernet connectors to the ETH-SER-EE9 Ethernet ports. A RS-232 serial connection with a null modem cross over cable or adapter will be used to connect both ETH-SER-EE9 converters. Make sure the network portion of the IPs are still the same. We will need to open two instances of AccessPort since data is transmitted and received by two different ports (between two different computers).
 - a. Connect the Ethernet cable to one PC or laptop.
 - b. A virtual COM port was automatically created during VSP setup.
 - c. Connect the other Ethernet cable to the other PC or laptop.
 - d. A second virtual COM port was automatically created during VSP setup.
- 2) In AccessPort select the yellow and green gear for each instance. Choose the COM ports and serial settings. Select “Enable Auto Send” and select OK. (SEE FIGURE 4.51)

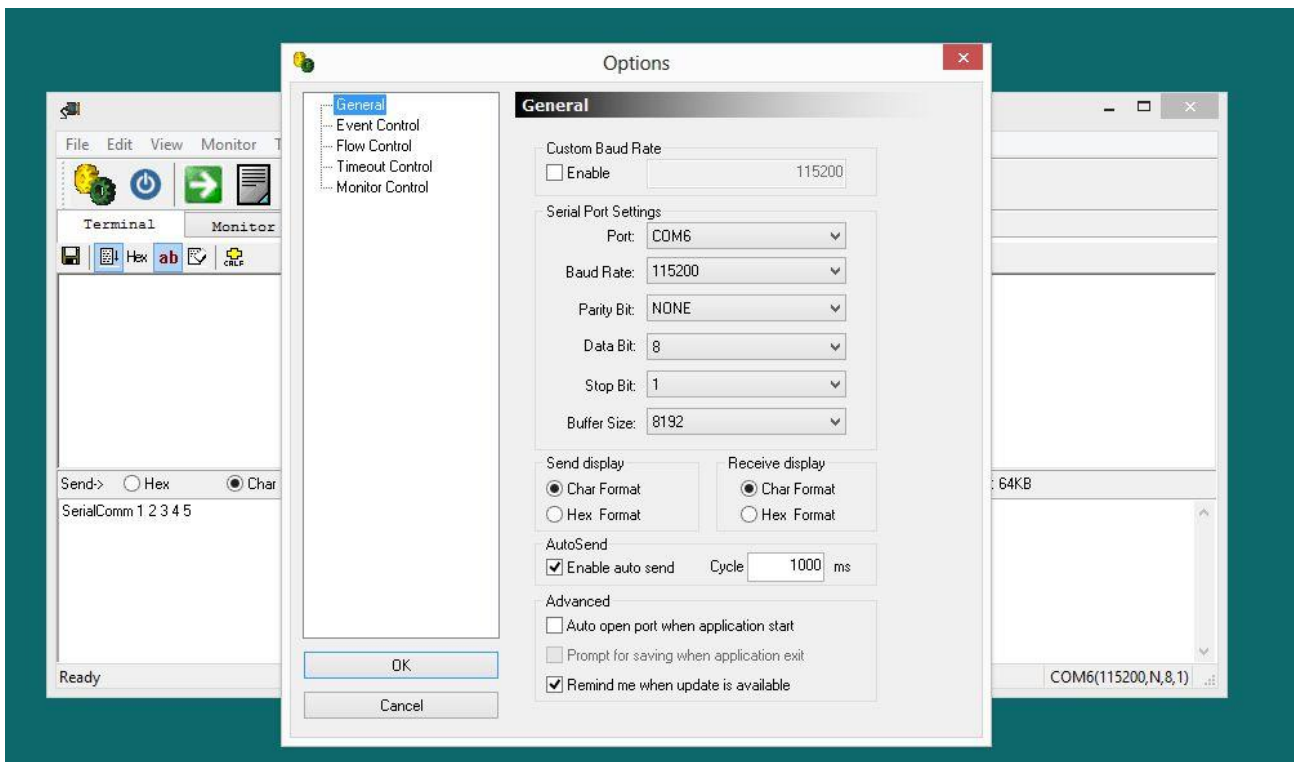


FIGURE 4.51 – ACCESSPORT SERIAL PORT CONFIGURATION

- 3) Perform the same setup of the other computer with its COM port settings. (SEE FIGURE 4.51).
- 4) In the output message box you can enter “Serialcomm 1 2 3 5” and the other output message box you can enter “Serialcomm A B C D E “.
- 5) In the input message boxes you should see the strings being received repeatedly. (SEE FIGURES 4.52 and 4.53).

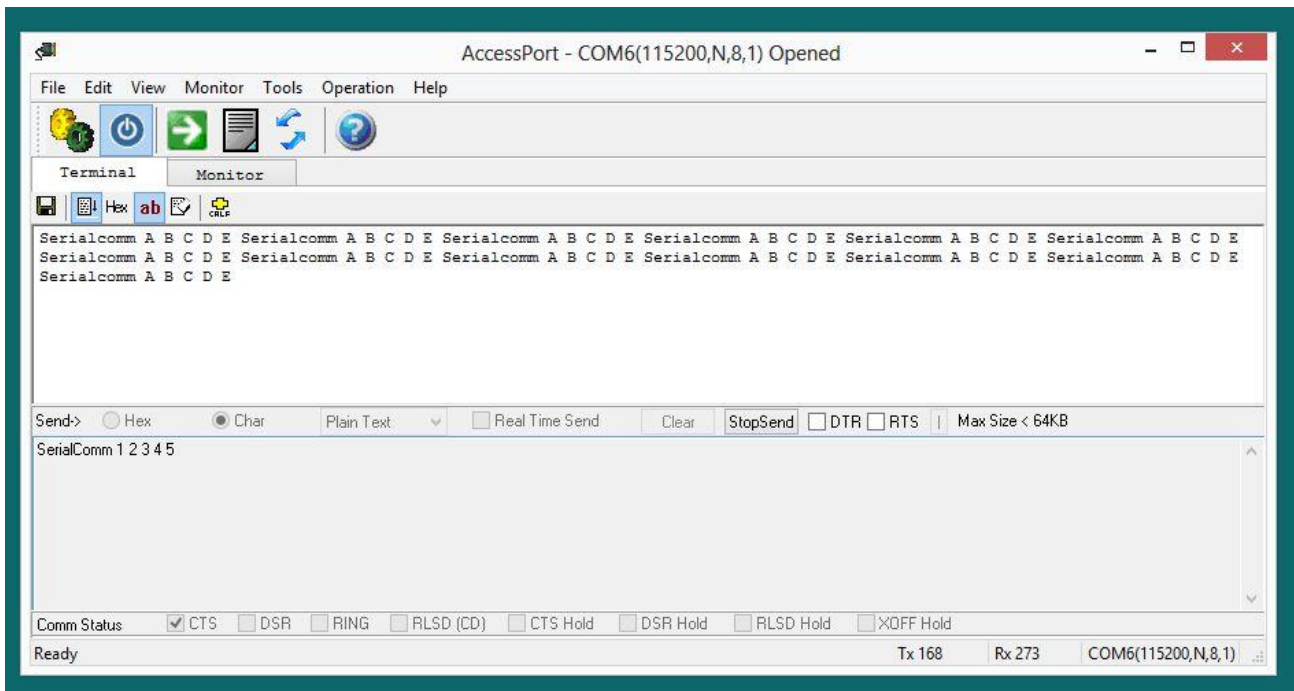


FIGURE 4.52 – SAMPLE OF ONE OF THE ACCESSPORT RESULTS

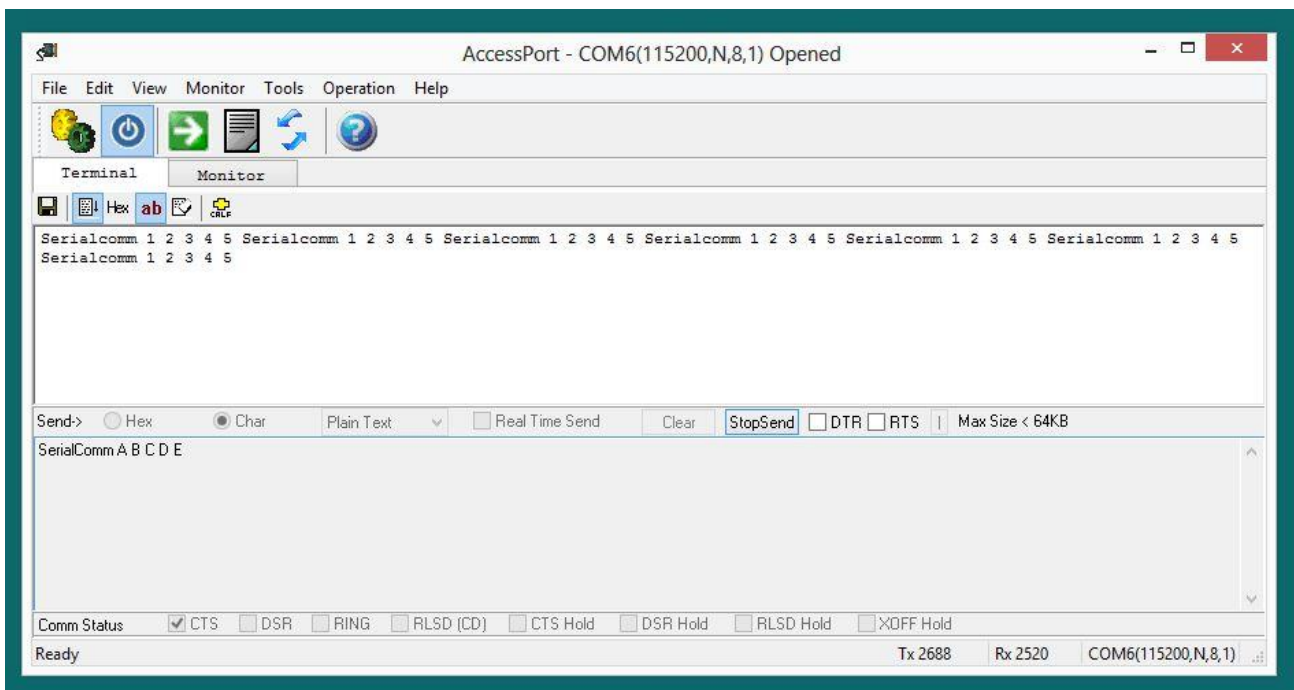


FIGURE 4.53 – SAMPLE OF THE OTHER ACCESSPORT RESULTS